ATTENTION!
This document was last updated June 10, 2008.

Please see individual web pages at http://catalog.waketech.edu for the most current information.
At Wake Technical Community College, our vision is a college that exceeds the expectations of its stakeholders for effective lifelong education and workforce training by providing world-class programs, services, and resources through an approach which models and teaches the core values of respect, responsibility, critical thinking, communication, and collaboration.
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Welcome to
Wake Technical
Community College!

We call ourselves “college for the real world” because our goal is to provide the educational tools people need to thrive in the 21st century workplace and community. All of our classes and programs are designed to be as relevant and practical as possible for today’s students, workers, and citizens – and to be accessible and affordable for all.

Ours is a diverse and rapidly changing community. We speak many languages, have a variety of talents, and seek different challenges. We need educational opportunities that fit our diverse needs, everything from basic skills to workforce training, global marketplace know-how, and of course, the very latest technologies.

Wake Tech’s diploma, certificate, and two-year degree programs offer a wide variety of options. We like to say that they’re “portable,” able to travel easily from one destination to the next. Graduates can elect to enter the workforce immediately, with the skills and credentials they need to boost earning power, or they can transfer to a four-year institution to pursue higher academic degrees. Workers can seek additional training and credentialing that can lead to advancement and upgrades in their employment. Lifelong learners can zero in on those skills they always dreamed of acquiring.

Wake Tech programs and services are offered day and night, at multiple campuses that span Wake County, including Raleigh, Cary, and our newest campus, on Louisburg Road at I-540 in North Raleigh. Wake Tech also offers continuing education classes at more than 60 community sites – high schools, churches, senior centers, correctional facilities and others. Finally, through our distance learning programs, we offer degree programs and continuing education classes online - in the comfort of your own home!

Whatever your educational goals, Wake Tech has courses and programs for you. Our faculty, staff, and administration are here to assist you in every way possible.

Please call on us!

Sincerely,

Dr. Stephen C. Scott
President
About the Catalog
The Wake Technical Community College Catalog is an information and reference guide on College policies; facilities; degree, certificate and diploma programs, course offerings; services; and personnel. The statements in the catalog are for informational purposes only, and should not be considered the basis of a contract between the institution and the student.

Generally, the provisions outlined in the catalog are applicable as stated, but Wake Technical Community College reserves the right to initiate changes, including but not limited to academic requirements for graduation, without direct notification to individuals. Any statement in this catalog is subject to change by the College. Though the College catalog is produced as a reference guide, each student is responsible for keeping apprised of current requirements for graduation for a particular degree program. Please visit our website at http://catalog.waketech.edu for the most recent version.

A Catalog Addendum may be published online by July 1 of each year, depending on the number of changes incurred since the Catalog was printed. Availability of a Catalog Addendum (if published) would be on the College’s website only. Many policy changes are listed on the Student Updates web page, located at http://Updates.waketech.edu.

Disability Support
Wake Technical Community College does not discriminate on the basis of disability in the admissions or employment processes or in access to programs, facilities, or activities. The following persons, whose offices are at the Main Campus on 401 South, have been designated to coordinate compliance with the non-discrimination requirements of the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973:

Disability Services/Access for Students
Janet Killen (919) 866-5670
TDD (919) 779-0668

Employment Access Denise H. Barton (919) 866-5937

Facilities Access Wendell Goodwin (919) 866-5148

This catalog can be accessed online at http://disabilityservices.waketech.edu. If needed in an alternate format (such as CD) by persons with disabilities, please contact Janet Killen well in advance of the need at jtkillen@waketech.edu or 919 866-5669.

Equal Access
Wake Technical Community College is committed to the policy that all persons shall have equal access to its programs, facilities and employment without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, or sexual orientation. For more information, see the Non-Discriminatory Policy in the Admissions section of this catalog.

Sex Crimes Prevention Act
The Federal Campus Sex Crimes Prevention Act requires registered sex offenders/predators to provide to the Wake County Sheriff’s Office notice of each institution of higher education in the state at which the offender/predator is employed, carries on a vocation, or is a student. Any member of the Wake Technical Community College community who wishes to obtain further information regarding sexual offenders/predators in their area may refer to any of the following websites:

State websites
http://www.fbi.gov/hq/cid/cac/states.htm

National Sex Offender Public Registry
http://www.nsopr.gov

NC Sex Offender and Public Protection Registry
www.ncfindoffender.gov

or call (919) 856-6900.

Change in Student Data
Changes of name, address, telephone numbers, or e-mail must be reported, in writing, to the Enrollment and Records Services Division immediately upon change. Address change requests may be submitted via WebAdvisor at http://webadvisor.waketech.edu.

Send changes to Enrollment and Records Services Division, Wake Technical Community College, 9101 Fayetteville Road, Raleigh, NC 27603

Other Changes
The Board of Trustees and/or administration of Wake Technical Community College reserve the right to change at any time, without notice, graduation requirements; fees and other charges; curriculum, course structure, and content; and other such matters as may be within its control, notwithstanding any information set forth in this catalog.

Affirmative Action/Equal Opportunity
Wake Technical Community College offers Equal Employment and Educational Opportunities to all employees, students, prospective employees, and prospective students. Affirmative Action, Equal Educational Opportunities, and compliance with the Americans with Disabilities Act are viewed by the Board of Trustees as an integral part of the mission and purpose of Wake Technical Community College.

Questions concerning this policy should be addressed to:

Student Matters:    Employee Matters:
Dean of Students    Director of Human
                   Resources/EEO Officer
(919) 866-5942      (919) 866-5937

Wake Technical Community College
9101 Fayetteville Road, Raleigh, NC 27603

Volume No. 30-2       June 10, 2008
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GENERAL INFORMATION

History
Wake Technical Community College is a tax-supported, public, educational institution under the control of a Board of Trustees. It is an institutional member of the North Carolina Community College System, State Board of Community Colleges. Authority for the establishment of the College is found in Chapter 115D of the General Statutes of North Carolina.

The College was chartered on April 3, 1958, as the Wake County Industrial Education Center. Operation actually began October 7, 1963, with 34 curriculum students on campus and 270 enrolled in the various industrial training programs.

On January 8, 1964, the Center was formally dedicated as W.W. Holding Industrial Education Center and transferred from the Wake County Board of Education to a Board of Trustees. On March 3, 1966, W.W. Holding Industrial Education Center was granted approval by the State Board of Education as W.W. Holding Technical Institute and licensed to award the Associate in Applied Science degree. The name was changed to Wake Technical Institute in September 1974 and to Wake Technical College on March 1, 1980. The name was changed to Wake Technical Community College on December 1, 1987.

On December 3, 1970, the College was accredited by the Southern Association of Colleges and Schools.

Mission
The mission of Wake Technical Community College is to help improve and enrich lives by meeting the lifelong educational, training, and service needs of its diverse community. The College is committed to promoting individual success in the workplace and higher education and to promoting cultural, social, and economic development.

In pursuit of its mission, this public two-year comprehensive postsecondary educational institution adheres to an open-door policy by offering quality accessible and affordable educational opportunities to all adults regardless of age, sex, socioeconomic status, ethnic origin, race, religion, or disability. To meet the needs of its community, the College focuses on providing support services, resources, community outreach, and partnerships; programs in basic skills development; vocational, technical, and occupational training; and college/university transfer preparation.

Vision
At Wake Technical Community College, our vision is a college that exceeds the expectations of its stakeholders for effective lifelong education and workforce training by providing world-class programs, services, and resources through an approach which models and teaches the core values of respect, responsibility, critical thinking, communication, and collaboration.

Core Values
The College has set out to provide a model for other institutions of higher education and an example for its students through its commitment to its core values.

- **Respect**—Respect is a prerequisite for enhancing learning. Community members who respect themselves and others help create a safe, yet open, climate of learning.

- **Responsibility**—Responsibility is the root of success. Students who assume personal responsibility for their education will reach their goals. Responsible students also make contributions to their communities.

- **Critical Thinking**—Critical thinking is the fundamental purpose of higher education. The ability to solve problems through the application of the appropriate skills is critical to all disciplines.

- **Communication**—Communication is increasingly the key competency for living and working in the information age. Communicating effectively in oral and written forms through traditional and new media is a powerful tool for personal and career success.

- **Collaboration**—Collaboration, by bringing together individual knowledge and talents, creates teams that are greater than the sum of their parts. Such teamwork maximizes benefits to individuals and the community.

Website: [http://qep.waketech.edu](http://qep.waketech.edu)
College Goals

STUDENT SUCCESS
Provide a dynamic learning environment to ensure successful achievement of students’ goals by administering sound policies, curricula, instruction, and support services.

WORKFORCE DEVELOPMENT
In collaboration with Regional Economic Development Partnerships, identify the workforce needs of emerging jobs in rural and urban economies in North Carolina. Develop and implement the educational and training programs necessary to meet the workforce needs of each community college service area in North Carolina and promote recruitment, retention, and development of high quality faculty and staff necessary to achieve the educational and training objectives of the community college system and provide North Carolina with a world-class workforce.

DIVERSE POPULATIONS LEARNING NEEDS
Provide North Carolina citizens with the opportunity to develop essential skills for lifelong learning. Upgrade and retrain North Carolina learners for the workplace through flexible, accessible, and customized educational and training programs within their communities.

RESOURCES
Continuously research, analyze, and secure the resources necessary to fulfill the mission of the North Carolina Community College System and develop processes for measuring the effectiveness of resource allocations and utilization, within the North Carolina Community College System.

TECHNOLOGY
Encourage and support North Carolina Community College faculty and staff in the effective and efficient uses of instructional technology and administrative computing systems to improve the delivery of academic programs to North Carolina citizens.

COMMUNITY SERVICES
Provide courses and support service activities for the enrichment of the community’s civic, economic, and cultural needs.

Programs & Services
The College translates its mission, vision, values, and goals into action through clearly defined programs and services. Specifically, the College:

• offers credit programs leading to associate degrees, diplomas, and certificates designed for immediate entry into employment, an associate degree in general education, and associate degrees designed to transfer to four-year institutions. The College also offers pre-curriculum programs for students to develop academic proficiency so that they may successfully complete curriculum courses.

• provides occupational career enhancement programs for individuals and support for economic development to businesses, industries, and agencies. Basic skills education, English as a Second Language and a wide variety of continuing education courses and programs for personal enrichment are offered on campus and throughout the county. The College further serves its constituents by providing a broad range of community services, partnerships, and outreach programs.

• provides a wide range of support services designed to assist students in successfully fulfilling their education and occupational goals. These services, developed to meet the diverse needs of individual students, begin with their initial contact with the College and continue throughout their enrollment and job placement or transfer for further study.

• practices sound fiscal management and systematic planning to provide facilities, equipment, and state-of-the art technology to ensure quality education opportunities at secure facilities accessible to Wake County citizens.

Accreditation

SOUTHERN ASSOCIATION OF COLLEGES AND SCHOOLS ACCREDITATION (SACS)
Wake Technical Community College is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award the associate degree.

Contact information: 1866 Southern Lane, Decatur, Georgia 30033-4097, Telephone number 404-679-4501
Website: http://www.sacscoc.org/

SPECIFIC PROGRAM ACCREDITATION

Automotive Systems Technology Accreditation
The college’s Automotive Systems Technology associate degree program has received certification by the National Automotive Technicians Education Foundation (NATEF) and accredited by National Institute for Automotive Service Excellence (ASE). All eight areas meet the strict industry standards required for ASE MASTER certification. This is the highest level of achievement recognized by the National Institute for Automotive Excellence (ASE).

Criminal Justice Program Accreditation
The college’s Criminal Justice Technology program is accredited by the North Carolina Criminal Justice Education and Training Standards Commission.

Culinary Technology Program Accreditation
The college’s Culinary Technology program is accredited by the American Culinary Federation.
GENERAL INFORMATION

Dental Assisting and Dental Hygiene Programs Accreditation
The college’s programs in Dental Assisting and Dental Hygiene have received accreditation (without reporting requirements) status from the American Dental Association, Commission on Dental Accreditation. A copy of the appropriate accreditation standards and/or the Commission’s policy and procedure for submission of complaints may be obtained by contacting the Commission at 211 East Chicago Avenue, Chicago, IL 60611-2678, or by calling 1-800-621-8099, extension 4653.

Heavy Equipment and Transport Technology/Construction Equipment Systems Program Accreditation
The college’s Heavy Equipment and Transport Technology/Construction Equipment Systems Program is accredited by Accreditation Board of the Associated Equipment Distributors.

Medical Assisting Program Accreditation
Wake Technical Community College’s Medical Assisting Diploma program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon the recommendation of the Curriculum Review Board of The American Association of Medical Assistants Endowment (CRB-AAMAE).

Medical Lab Technology Program Accreditation
The National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) is the accrediting agency for the Medical Laboratory Technology program and the approving agency for the Phlebotomy program. The NAACLS is located at 8410 West Bryn Mawr Avenue, Suite 670, Chicago, IL 60631 (Telephone number 773-714-8880).

Radiography Program Accreditation
Wake Technical Community College’s program in Radiography is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT). The JRCERT is located at 20 N. Wacker Drive, Suite 2850, Chicago, IL 60606-3182 (Telephone number 312-704-5300).

Surgical Technology Program Accreditation
The college’s Surgical Technology program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) on recommendation of the Accreditation Review Committee for Surgical Technology (ARC-ST).

Approvals
American Culinary Federation
National Accrediting Agency for Clinical Laboratory Sciences
North Carolina Board of Nursing
North Carolina Department of Health and Human Services – Division of Health Service Regulation
North Carolina Office of Emergency Medical Services
North Carolina Real Estate Commission
North Carolina State Approving Agency for Veterans Education and Training
North Carolina State Board of Community Colleges

Memberships
Air Conditioning Contractors of America (ACCA)
American Association for Women in Community Colleges (AAWCC)
American Association of Collegiate Registrars and Admissions Officers (AACRAO)
American Association of Community Colleges (AACC)
American Association of Medical Assistants Endowment (AAMAE)
American Massage Therapy Association (AMTA)
American Mathematical Association of Two-Year Colleges (AMATYC)
Association Community College Business Officials (ACCBO)
Association of Community College Facility Operations (ACCFO)
Association of Community College Trustees (ACCT)
Carolinas Association of Collegiate Registrars and Admissions Officers (CACRAO)
Chamber of Commerce - Apex
Chamber of Commerce - Cary
Chamber of Commerce - Fuquay-Varina
Chamber of Commerce - Garner
Chamber of Commerce - Holly Springs
Chamber of Commerce - Knightdale
Chamber of Commerce - Morrisville
Chamber of Commerce – Raleigh
Chamber of Commerce - Rolesville
Chamber of Commerce - Wake Forest
Chamber of Commerce - Wendell
Chamber of Commerce - Zebulon
College and University Professional Association For Human Resources (CUPA-HR)
College Transfer Program Association (CTPA)
Committee on Accreditation of Allied Health Education Programs (CAAHEP)
Community College Business Officers (CCBO)
Consortium for Student Retention Data Exchange (CSRDE)
Construction Management Association of America (CMAA)
Cooperative Education and Internship Association, Inc. (CEIA)
Council for Resource Development
EduCause

2008-2009 | Wake Technical Community College
Help Desk Institute
International Association of Campus Law Enforcement Administrators (IACLEA)
International Council on Hotel, Restaurant, and Institutional Education (ICHRIE)
Leadership Raleigh Alumni Association
League for Innovation Community College Leadership Institute League Alliance Services
Learning Resources Network (LERN)
National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)
National Association of College and University Business Officers (NACUBO)
National Association of Colleges and Employers (NACE)
National Association of International Educators (NAFSA)
National Association of Student Financial Aid Administrators (NASFAA)
National Community College Benchmark Project (NCCBP)
National Council for Continuing Education and Training (NCCET)
National Council on Student Development (NCSD)
National Fire Protection Association
National HEP Camp Association
National Institute of Governmental Purchasing (NIGP)
National Institute for Staff & Organizational Development – The University of Texas (NISOD)
National Organization for Associate Degree Nursing (NOADN)
National Restaurant Association/NC Restaurant Association
North Carolina Association of Campus Law Enforcement Administration (NCACLEA)
North Carolina Association of Colleges and Employers (NCACE)
North Carolina Association of Community College Trustees (NCACCT)
North Carolina Association of Government Information Officers (NCAGIO)
North Carolina Association on Higher Education and Disability (NC-AHEAD)
North Carolina Association of Volunteer Administrators (NCAVA)
North Carolina Business Association (formerly NCCBI)
North Carolina Chamber (formerly NCCBI)
North Carolina College and University Professional Association – Human Resources (NCCUPA-HR)
North Carolina Community College Student Development Personnel Association (N3CSDPA)
North Carolina Council of Officers for Resource Development (NC CORD)
North Carolina Distance Learning Association (NCDLA)
North Carolina Hispanic Chamber of Commerce
North Carolina Restaurant & Lodging – National Restaurant Association (NCRLA)
North Carolina Technology Association (NCTA)
Public Relations Information Marketing Association (PRIMA)
Raleigh Television Network
Raleigh-Wake Human Resource Management Association (RWHRMA)
Regional Transportation Alliance
Society for Human Resource Management
Southern Association of Colleges & Schools
Southern Association of Collegiate Registrars and Admissions Officers (SACRAO)
Southern Association of Community Jr. & Tech Colleges (SACJTC)
Southern Growth Policies Board
Student Leadership Institute
Triangle Area Hotel-Motel Association
Triangle Tomorrow, Inc.
US Green Building Council (USGBC)
Wake AHEC/Triangle Nurse Appreciate Council
Wake Area Business Advisory Council (BAC)
Wake Association of Volunteer Administrators (WAVA)
World Future Society

Foundation
Wake Technical Community College Foundation solicits private support from corporations, foundations and individuals.

Gifts are used for emergency financial aid and student scholarships, equipment, recognition awards, professional development, facility improvements, and a variety of other purposes outside the scope of traditional college funding sources. The Foundation also enables the College to meet emergency funding needs as well as special opportunities that improve Wake Tech's ability to serve the community.

All private gifts to Wake Technical Community College should be directed to the Wake Technical Community College Foundation, a tax-exempt, 501(c)(3) nonprofit corporation, operating exclusively for the benefit of the College and Wake Tech students.

Donors or advisors should send correspondence to:

Executive Director
Wake Technical Community College Foundation
9101 Fayetteville Road
Raleigh, North Carolina 27603-5696
919-866-5924
mcongleton@waketech.edu
Website: http://foundation.waketech.edu
Locations
Courses are offered at Wake Technical Community College locations throughout Wake County.

**MAIN CAMPUS**
9101 Fayetteville Road
Raleigh, North Carolina 27603
919-866-5000
http://maincampus.waketech.edu

Wake Tech’s Main Campus, located seven miles south of Raleigh on US 401, opened its doors as the Wake County Industrial Education Center in 1963 with a first class of 34 students. Today, the campus serves thousands of students each year in continuing education (non-credit) and curriculum education (for-credit) programs. Courses are offered days, evenings, weekends, and via distance education technologies.

Continuing education courses available at the Main Campus include professional training and upgrading in building/trades licensure, computer applications, and notary; and personal enrichment in foreign languages, health and wellness, motorcycle safety, and photography and videography. This campus also serves student needs for developing basic skills, English as a second language competency, and the knowledge required for GED success.

For those seeking college credit and credentials, the campus offers all the coursework necessary for two-year associate degrees for career placement and university transfer, as well as for job-ready technical diplomas and certificates requiring one year or less. The Main Campus houses accredited for-credit programs preparing students for occupations and further study in applied technologies, business technologies, computer technologies, engineering technologies, as well as the arts, humanities, mathematics, natural sciences, and social sciences.

Wake Tech’s Main Campus also provides students with a comprehensive set of resources and services. Resources include a library, computer labs, skills labs, smart classrooms/conference rooms, a bookstore, and a restaurant. Services include admissions, career counseling and placement, academic advising, disability support, student life, and tutoring.

**NORTHERN WAKE CAMPUS**
6600 Louisburg Road
Raleigh, North Carolina 27616
919-866-5000
http://northerncampus.waketech.edu

Wake Tech’s Northern Wake Campus opened in August 2007 with two instructional buildings and a regional plant for heating and cooling. The 60,000 square foot administration building is where core subjects, such as English and history, are taught. It’s also the home of Student Services, including admissions, counseling, and financial aid. The 65,000 square foot Mathematics & Science building offers a two-story library, state-of-the-art chemistry and biology labs, and a student lounge. A third classroom building, under construction, will provide computer labs as well as a bookstore and coffee shop. There are volleyball and tennis courts for physical education.

The Northern Wake Campus has the distinction of being constructed as the first college campus in the state – and possibly the first college in the nation to have all current buildings built according to LEED certification guidelines. “LEED” stands for Leadership in Energy and Environmental Design. It’s the green-building industry’s highest standard for environmentally-friendly construction. The Northern Wake Campus is also completely tobacco free.

Currently, academic programs offered at the Northern Wake Campus focus on University Transfer.

Students can also take a variety of Continuing Education classes at the Northern Wake Campus. Classes include art, teacher education, foreign language, building and construction related, and special events. Our Basic Skills program offers English as a Second Language (ESL), Adult Basic Education (ABE), and General Education (GED) classes at the Northern Wake Campus.

The Northern Wake Campus encompasses only about 30 of the 125 acres Wake Tech purchased in 1994. There’s plenty of room for the growth that college leaders know is inevitable – and for the cutting-edge programs and
courses, such as bioinformatics and pervasive computing, that are planned for the Northern Wake Campus. For now, students can enjoy the experience of Wake County’s newest college campus. For more information, visit http://northerncampus.waketech.edu/

WESTERN WAKE CAMPUS
Millpond Village
3434 Kildaire Farm Road
Cary, North Carolina, 27511
919-335-1000
http://westerncampus.waketech.edu

The Western Wake Campus opened its doors in the fall of 2005 and has consistently grown in both course offerings and support services that include:

- Associate in Arts Degree Program (College Transfer)
  Students can complete a 2-year Associate in Arts college transfer on a Monday through Friday schedule – with no Friday classes. The A.A. includes 64 hours of coursework in English, math, science, and the social sciences, equivalent to the general education requirements for a bachelor's degree college or university.

- The Business and Industry Services Division provides customized employee training for area businesses. Training can be designed for industrial, clerical, supervisory and management occupations. It includes the following areas:
  - Apprenticeship – Customized apprenticeship programs in various trades
  - Professional Development and Corporate Training – Personal development programs customized to meet the needs of participating businesses and individuals
  - Focused Industrial Training – Technical knowledge, job upgrading or other on-site skills training for small groups of workers
  - New and Expanding Industry – Cooperative program with new and expanding industries in the area, with the purpose of providing a supply of trained personnel
  - Small Business Center – Technical and managerial assistance to prospective and current business owners and operators through a variety of seminars, study courses and one-on-one assistance.

Continuing Education offers a wide variety of non-credit courses: Human Resources Development, offer employability skills in resume writing, career exploration, and a variety of basic computer classes. Other Continuing Education classes include medical health care office occupation certificate, a variety of culinary classes, horticulture, work place classes, soft skills classes, and a range of art classes. English as a Second Language (ESL) competency and on-line GED preparation.

Wake Tech’s Western Wake Campus also provides students with support services that include a library, computer lab, wireless access, tutoring admissions, advising and outreach counseling, financial aid, disability support service coordination, and student government information.

HEALTH SCIENCES CAMPUS
2901 Holston Lane
Raleigh, North Carolina 27610
(behind Wake Medical Center)
919-747-0400
http://healthsciencescampus.waketech.edu

The Health Sciences campus offers both curriculum and continuing education programs in health sciences. For those seeking careers or further credentials in the healthcare fields, our Health Sciences campus offers job-ready curriculum programs that lead to an associate degree, diploma or certificate. The Health Sciences campus houses accredited programs preparing students for occupations in Associate Degree Nursing, Dental Assisting, Dental Hygiene, Emergency Medical Science, Human Services Technology, Medical Assisting, Medical Laboratory Technology, Phlebotomy, Radiography and the imaging specialties of Computed Tomography and Magnetic Resonance Imaging, Surgical Technology, Therapeutic Massage, Associate Degree Nursing, and Pharmacy Technology (in collaboration with Johnston Community College).

Our programs are designed to meet the needs of our students as well as the standards of care mandated by employers and our accrediting bodies. All of our curriculum (for-credit) programs are taught by professionals in their fields and include clinical or co-op experiences. Our affiliations with major health care institutions, physician offices, dental offices, and other clinical sites in the area provide our students with excellent clinical training in all areas of specialization.
Admission to many of the health sciences programs is selective and limited.

Continuing Education classes offered at the Health Science Campus include Human Resources Development, emergency medical technology, certified nursing assistant, medical terminology, medical coding, CPR, pharmacy technician practice, and mammography technician continuing education. Our Basic Skills program offers English as a Second Language (ESL) at the Health Science Campus.

THE NEWS AND OBSERVER ADULT EDUCATION CENTER
1920 Capital Boulevard
Raleigh, North Carolina 27604
http://facilities.waketech.edu/campuses/aec.php

Basic Skills is designed primarily to help adults learn to read; improve math, reading, and writing skills; earn a high school or GED diploma; and learn English as a second language.

The Basic Skills program is also designed to help underemployed/unemployed persons prepare for employment or further education, developmentally disabled persons achieve their potential, and families strengthen literacy skills and family bonds.

No tuition is charged; however, books and supply charges may apply.

Basic Skills classes are offered at community sites as well as the Main Campus and the Adult Education Center. Placement and orientation for community classes are conducted at the class site. To pre-register for classes on the Main Campus, call the Individualized Learning Center at (919) 866-5276.

To schedule an appointment for the Adult Education Center or to learn more about Basic Skills programs and their locations, individuals should call the Adult Education Center, 715-3434.

PUBLIC SAFETY TRAINING CENTER
321 Chapanoke Road
Raleigh, North Carolina 27603
http://publicsafety.waketech.edu

Wake Tech’s new Public Safety Training Center opened in January 2008 to serve the growing needs of area law enforcement and other public service agencies. The Center provides in-service training for law enforcement officers, firefighters, corrections officers, and emergency medical service providers. It is the first centralized facility for training of this kind in Wake County.

Currently, the Public Safety Training Center occupies just 18,520 square feet of the facility’s total 100,666 square feet of space. Phase II renovations are in the works, with completion planned for 2010. Wake Tech plans to make the Center a model regional training facility with addition of a mock courtroom and jail, a booking center, and additional classrooms for forensics and other instruction. Emergency Medical Training will be added as well.

STATE PERSONNEL DEVELOPMENT CENTER
101 West Peace Street
Raleigh, North Carolina 27603
919-733-2474
http://www.osp.state.nc.us/train.htm

Wake Technical Community College and the Office of State Personnel/Human Resource Development formed a partnership over 20 years ago to make computer software and technology training available to state employees. Wake Tech instructors teach one- and two-day short courses, curriculum classes and on-line courses on the most current software programs with a focus on those used throughout state government.
**Admission Criteria**

Wake Technical Community College follows the Open Door Policy established by the State Board of Community Colleges. This policy provides for the admission of any person who has reached the age of 18 or who has graduated from high school. This policy is based on the belief that the College has something to offer at all educational levels and that through effective guidance a person can find his or her place in the proper educational program.

**Admission Policies**

**HIGH SCHOOL DUAL ENROLLMENT**

A dual enrollment applicant is anyone currently enrolled as a private, home, or public high school student and taking classes at Wake Tech. Applicants should use a standard application (Wake Tech Form 66) and must also submit a permission form obtained from their school. Home and private school applicants may request this form from the Information Center in the Student Services building on the main campus. Applicants must be 16 years of age by the first day of the semester. (The 2001 Session of the North Carolina General Assembly pursuant to S.L. 312 allowed a student under the age of 16 to enroll in a community college if the president of the college or the president’s designee finds that the student is intellectually gifted and has the maturity to justify admission to the college. Students wishing to pursue this option should contact the Director of Admissions for specific criteria and procedures.)

**NON-DISCRIMINATORY POLICY**

Wake Technical Community College offers Equal Employment and Educational Opportunities to all employees, students, prospective employees, and prospective students. Affirmative Action, Equal Educational Opportunities and compliance with the American with Disabilities Act are viewed by the Board of Trustees as an integral part of the mission and purpose of Wake Technical Community College. Questions concerning this policy should be addressed to: Dean of Students, Wake Technical Community College, 9101 Fayetteville Road, Raleigh, NC 27603. The Dean of Students office is located in the Student Services building, Room 121 G on the Main Campus.

**OFFICIAL COMMUNICATION WITH STUDENTS POLICY**

New policies and upcoming policy changes will be communicated to students on the official Updates Web page, located at http://Updates.waketech.edu and via their assigned student portal email addresses.

Students are provided student portal email addresses upon acceptance and enrollment to the College. Should they choose not to receive communication via e-mail, they must refer to the official Updates Web page for information.

**RELEASE OF TRANSCRIPTS**

Enrollment & Records is responsible for student records. All students are provided rights under the Family Education Rights and Privacy Act (FERPA). Transcripts of Academic Record will be issued upon written authorization from the student.

Official copies of transcripts are available at a cost of $5.00 per copy. Student copies of transcripts are available at no charge; however, transcript requests will not be processed, under any circumstances, for students who have any outstanding indebtedness to the College.

Transcript requests may be made in person to the Enrollment and Records Services Division, mailed to the division, requested by fax, or made online. One copy of a transcript will be provided per request. Transcripts requests are fulfilled when requested in person. Requests via mail or online are processed within 1-2 business days. A photo I.D., such as a driver’s license, is required for pickup of transcripts.

Transcripts may be requested on the order form downloaded from the college website at http://registration.curred.waketech.edu/transcripts.php.

**Admission Procedures**

1. Submit application
2. Send high school transcript and/or college transcripts
3. Take the placement tests (unless waived)
4. Contact advisor for course selection
5. Register on assigned date
6. Attend orientation if required by program area
7. Attend class
APPLICATION
Any individual wishing to apply to Wake Technical Community College should contact the Information Center at 919-866-5000 to request an application or an online application may be submitted by visiting the college website at http://admissions.waketech.edu/procedures.php. Each applicant must submit a properly completed application to the Office of Admissions. The application form should include the student’s classification.

Classification of applicants:

A curriculum applicant is any person who is pursuing admittance into a degree, diploma, or certificate program. Curriculum applicants should complete the standard (Wake Tech Form 66) Application for Admission.

A special applicant is any applicant who is planning to enroll in one or more curriculum courses, but who is not pursuing admission into a degree, diploma, or certificate program. Special students may complete the standard Application for Admission (Wake Tech Form 66). Special students must meet all course prerequisites or receive approval from the instructor before registering.

NOTE: Generally, the special credit status is limited to 16 semester hours. Special credit students are not eligible for financial aid or veterans’ benefits, nor are they permitted to earn any degree, diploma, or certificate awarded by the College. Students wishing to change from special credit to curriculum status must complete the standard application (Wake Tech Form 66) and submit all necessary transcripts.

A concurrently enrolled or dual enrollment applicant is anyone currently enrolled as a private, home, or public high school student who wishes to take concurrent classes at Wake Tech. See information about Dual Enrollment at the beginning of this chapter.

TRANSCRIPTS
Each applicant must have official copies of transcripts of all previous high school and college (if any) work submitted directly to Wake Tech. Transcripts become the property of the College upon receipt and may not be copied for student use. Faxed copies are NOT considered official transcripts. Acceptance by Wake Tech is conditional based upon receipt of final official transcripts.

High School: Applicants who are high school seniors should have their school submit a transcript showing work through the first semester of the senior year as soon as possible after the semester has ended and a supplementary transcript showing graduation at the close of school.

GED: Applicants who have a high school equivalency certificate should request that a copy be sent directly to Wake Tech.

College: Official transcripts of previous education in other colleges and universities should be submitted to Wake Tech. Applicants presenting transcripts of completed associate degrees, or higher, will not need to submit high school transcripts, except in Health Sciences curricula where ALL transcripts are required.

PLACEMENT TESTING
The COMPASS placement examination is administered to each applicant pursuing a degree, diploma, or certain certificate programs to determine the individual’s skill level and readiness. Placement testing results will be used to determine the need, if any, for developmental instruction. Students who are non-native speakers of English will take the COMPASS-EFL test and may be required to enroll in English as a Foreign Language courses. More information regarding English as a Foreign Language can be found in the Student Services section under Academic Support and Opportunities. Applicants who have taken the SAT or ACT should have their scores sent to the College. Acceptable SAT or ACT scores may eliminate the need for placement testing. SAT or ACT math scores will not be used to waive the math placement test for applicants to the Associate in Science program. Also, one transferable course (grade of “C” or better) each in college-level mathematics and English will exempt the applicant from placement testing, except in competitive admission programs. (See Limited Enrollment Programs.)

Advisors will use this information for placement of a student in mathematics, English, reading and writing classes.

Applicants who have been notified that they need placement testing may make an appointment online at http://testingcenter.waketech.edu or call (919) 866-5461 to schedule an appointment. In preparation to perform their best on this computerized placement test, applicants should:

1. Read through “Chart Your Success on the COMPASS” available at the Wake Tech Library or purchased as a study guide.
2. Obtain a referral form from a counselor for placement test preparation at our Individualized Learning Center (ILC) prior to testing.
CURRICULUM FRENCH AND SPANISH PLACEMENT EXAMS
The following students MUST take the Wake Tech PLACEMENT EXAM to determine the level at which they should continue their foreign language studies:

- Native speakers: Students who received their primary literacy education in French or Spanish.
- Heritage learners: Students who have not received their primary literacy education in French or Spanish. Language skills acquired vary by household and may not include reading and writing skills in the second language.
- Students who have earned a grade of B (87) or better on each of the THREE years of high school study of the same language.
- Students who have lived or have studied in a Spanish or French speaking country.
- Incoming transfer students returning to the study of French or Spanish begun in high school, but not previously pursued at the college level.

PLACEMENT REQUIREMENTS

Associate Degree Programs
- High school diploma or equivalent.
- Sufficient mathematics and science to meet specific program requirements.
- Educational aptitude as determined by standard tests. Placement inventories to aid in student selection, placement, and guidance.
- Medical examination for certain Health Sciences programs.

Diploma Programs
- High school diploma or equivalent.
- Sufficient mathematics and science to meet specific program requirements.
- Educational aptitude as determined by standard tests. Placement inventories to aid in student selection, placement, and guidance.
- Medical examination for certain Health Sciences programs.

Certificate Programs
- Demonstrated ability to benefit from the training.
- Some programs have additional minimum requirements (contact the admissions advisor at 919-866-5000 for specific information).
- Medical examination for certain Health Sciences programs.

In some instances, licensing or employment within certain fields may be limited by an individual’s prior criminal record. Prospective students should check with an admission counselor or appropriate academic department head to determine if such sanctions apply to them.

CLASS SCHEDULE PUBLICATIONS
Class schedules for upcoming terms are made available approximately two to three months prior to the start of the term. On-line class schedules are available on the Wake Tech website (http://www.waketech.edu).

A “Wake Tech Curriculum Education Credit Courses Registration Guide” is prepared for enrolled and prospective students. This guide is also available on the Wake Tech website; and on the Main Campus, Health Sciences Campus, Adult Education Center, Western Wake Campus, Northern Wake Campus, community school sites, Wake County libraries, and most chambers of commerce.

REGISTRATION
Students who are admitted to a curriculum degree, diploma, or certificate program will receive course planning and registration information from an admissions advisor or an Advising Center advisor. Based on the student’s program of study, course planning and registration information after the initial enrollment is obtained from either a faculty advisor or Advising Center advisor.

Special students (those who have not declared a program of study) are not assigned a faculty advisor, Advising Center advisor, or admissions counselor. However, special students may seek course planning from the Admissions and Advising Office as needed.

Registration is conducted online (on the web) via WebAdvisor (http://webadvisor.waketech.edu). Click log in, if you are a current student. Then select Search for Sections or Search and Register under the Registration heading. More detailed information regarding the use of WebAdvisor can be accessed by clicking on the How to Use WebAdvisor link at the top of the WebAdvisor page.

The ability to access the registration system may be blocked if the student has any type of financial or academic hold. In some cases, special permission may be required by the curriculum deans to register for a specific class. Visit Wake Tech’s Enrollment and Records website at http://registration.curreducation.waketech.edu or WebAdvisor at http://webadvisor.waketech.edu for more information on courses being offered, registration procedures, and other information you need.

Registrations will be deleted if payment is not received by the payment deadline listed for the registration period in which you registered. Students are responsible for paying the amount due for all scheduled classes, by the published due date. Wake Tech no longer mails invoices. The amount due and date due can be obtained from Web Advisor. Students may pay tuition and fees by credit or debit card at the time of registration and avoid waiting in line at the cashier window. Students are strongly encouraged to use this option.

Currently enrolled degree, diploma, and certificate-seeking students are notified of upcoming registration periods through the academic calendar on student portal, faculty
advisors, campus notices, and postcards mailed to the current address on file. The student is responsible for scheduling an appointment with an advisor.

**Course Load**
The maximum course load is 20 credit hours per term. To carry more than the maximum load, students pursuing a degree, diploma, or certificate must obtain an electronic override permission from the dean or the dean’s designee.

**LIMITED ENROLLMENT PROGRAMS**
There are some limited enrollment programs that have more applicants than available space. Applicants must meet additional requirements, including sufficient math and science courses, clinical site visits, attendance at mandatory orientation, criminal background checks, CPR certification, physical (medical) examination, etc. Some programs require the applicant to remove any academic deficiencies before consideration for the program. Applicants may also be ranked according to the published criteria for placement into one of the competitive programs. This ranking may include performance in specific course work at the postsecondary level, related work experience, and/or specific professional certifications. The requirements for placement in specific limited enrollment programs are published in each program’s Student Policy Handbook.

Applicants to limited enrollment programs should contact the Admissions Office. Many limited enrollment programs have different application deadlines and requirements that are subject to change.

Limited enrollment programs include:
- Air Conditioning, Heating, and Refrigeration Technology
- Associate Degree Nursing
- Automotive Systems Technology
- Basic Law Enforcement Training
- Computed Tomography and Magnetic Resonance Imaging Technology
- Dental Assisting
- Dental Hygiene
- Emergency Medical Science
- Medical Assisting
- Medical Laboratory Technology
- Phlebotomy
- Radiography
- Surgical Technology

**Personal Interview:** A personal interview is beneficial to both the applicant and the Admissions Advisor. The applicant has an opportunity to ask questions about the College and its programs, while the Admissions Counselor evaluates the applicant’s interest in, and ability to pursue, the program of study for which he or she applied.

All correspondence concerning enrollment and placement should be addressed to the Admissions Office.

**CHANGE OF PROGRAM**
Any student desiring to change from one curriculum to another must initiate the change through the Admissions Office. Students receiving VA educational benefits must also file a change of program request (VA form 22-1995) with the College VA certifying official (Financial Aid).

**INTERNATIONAL STUDENTS**
The International Student Office assists international student applicants who wish to apply for a student (F-1) visa or other non-immigrant visa holders who want to convert to F-1 status. It also provides on-going assistance for F-1 visa students in their communication with the Citizenship and Immigration Services (CIS), including but not limited to: application for appropriate employment authorization, extension of I-20 expiration date, transferring an I-20 to another college or university, travel abroad, and re-entry procedures and documentation of F-1 status. In addition, international students may seek advice and referral information on all aspects of living and studying in the United States. All international (F-1) students are required by CIS regulations to have a current record of their local and foreign addresses on file with the College.

**READMITTED STUDENTS**
Any student who withdraws from the College for reasons other than academic or administrative can be considered for readmission at any subsequent semester. Applicants who have not attended for one year or more must submit a new application. A student who has been dismissed for academic or administrative reasons for one semester or more may re-enroll upon approval by the Dean of Students after a review of the student’s situation with the division dean. Requests for re-enrollment must be in writing and addressed to the Dean of Students. The decision as to whether a former student will be allowed readmission to the College and any conditions or restrictions attached to such readmission are discretionary on the part of the College.

Health Sciences curricula may have readmissions policies that are different from the general policies of the College. These policies will be given to each student enrolled in a Health Sciences curricula in the Student Policy Handbook for each program.
Advanced Standing & Transfer

Advanced standing is a means by which students can satisfy graduation requirements by applying transfer work and credits from placement examination. When it is determined that work from another college is equivalent to a Wake Tech course(s), students are given an equivalency for the advanced standing work, meaning that it is deemed equivalent to a specified Wake Tech course. However, no academic credit is awarded, and thus the equivalency will not count toward the student’s grade point average.

Equivalencies will be noted on the official transcript as transferred equivalencies or non-course equivalencies. Equivalencies will be taken into consideration for program completion at Wake Tech only. Acceptance of advanced standing work at one college does not necessarily mean that acceptance will be given at every college. Students are encouraged to review the advanced standing policies at any college for which they may be considering to transfer or enroll.

TRANSFERRED COURSEWORK

Wake Tech will consider courses for transfer equivalency, from other colleges or collegiate institutions accredited by a commission whose responsibility is accrediting degree-granting institutions classified as collegiate, and be a commission housed in a regionally accrediting agency.

Only those courses with a grade of “C” or higher will be considered for transfer. The course must be equivalent in content (and in college/university transfer, credit hours) to a Wake Tech Course. Official transcripts from accredited institutions will be reviewed against established standard equivalencies and transfer equivalency recommended by the appropriate dean or a designee. Decisions about whether transfer equivalency will be allowed, how much will be allowed, and how such transfer equivalency will be applied, are discretionary on the part of the College.

It is not necessary for students to request a review of transferred coursework. When official transcripts are received for an applicant in a curriculum program, the transcripts are sent to the Transfer Services department for initial review against the established standard equivalencies. Any courses that are not found in the standard equivalencies database are forwarded to the Associate Registrar and/or curriculum deans for review and decision. Recommended equivalencies are given and noted on the student’s academic record. A copy of the transfer equivalency report is mailed to the student advising which courses have been granted equivalency. Please note that a granted equivalency does not mean it satisfies a graduation or program requirement. It simply means that the course is equivalent to a Wake Tech course. Whether or not the granted equivalency can be used for graduation or program requirements will depend on its listing as a requirement on the curriculum schedule for the specific program (major) in which the student is enrolled at the time of admission to the College. Some programs may also have a time limit on transferability of selected courses. The academic dean has the option of moving the student to a more current version of the program of study (curriculum schedule).

Students must complete a minimum of 25 percent of hours required for a degree, diploma, or certificate in residence at Wake Technical Community College. Final course work must be completed in residence at Wake Technical Community College.

ADVANCED PLACEMENT (AP) CREDIT

The College Entrance Examination Board (CEEB) sponsors an advanced placement program that enables high school students to complete college-level courses while still in high school, to demonstrate college-level achievement through examinations, and to receive college course credit when they matriculate to an institution of higher education. The CEEB examinations are offered in the high schools by the Educational Testing Service (ETS).

COLLEGE LEVEL EXAMINATION PROGRAM (CLEP) CREDIT

CLEP is a program that offers the student the opportunity to earn college credit for knowledge acquired outside the conventional classroom. College-level competency may have been acquired through personal reading, formal study, job experience, non-credit course work, television-taped courses, correspondence courses, military training, adult courses, and advanced studies in high school. For information regarding the CLEP Testing Program, contact the College Board at www.collegeboard.com/clep.

DANTES STANDARDIZED SUBJECT TESTS (DSST)

The DANTES Program (Defense Activity for Nontraditional Education Support) is a testing service conducted by Educational Testing Service (ETS). DANTES, an agency of the Department of Defense, was created to help service members obtain credit for knowledge and skills acquired through nontraditional educational experiences. Since World War II, DANTES has sponsored and administered tests that provide qualified military personnel with the opportunity to obtain academic credit. DANTES Subject Standardized Tests provide a way for military personnel to obtain credit by examination for knowledge of material commonly taught in college courses.

DEPARTMENT AND SPECIAL COURSE CHALLENGE EXAMINATIONS

Students seeking credit for non-transferable learning experiences for any course, except College/University Transfer and Pre-Curriculum, may request a challenge examination. Subject matter for which credit is sought must be equivalent to the course(s) being challenged. Challenge examination requests will not be accepted for incomplete or failed course work. Requests must be made with full justification to the division dean or dean’s designee. Students who successfully challenge a course will receive
credit for the course with a grade of “X.” The course will not enter into grade-point average computations, but will count toward the total hours earned.

Students must register and pay tuition for courses to be challenged and must submit requests for challenge examinations after registering for the course(s) to be challenged. In order to get credit on the transcript record, it is necessary to remain registered for a class that has been challenged successfully. ENG 111, 112, 113, and 114, and all other College/University Transfer courses may not be challenged; instead, students may take the appropriate CLEP, AP, or DANDES exam.

FRENCH AND SPANISH NATIVE SPEAKERS ARE NOT ELIGIBLE TO RECEIVE CREDIT FOR 100 LEVEL FOREIGN LANGUAGE CLASSES

Students who think that their language skills will earn them credit for more than one course and want to get as much credit as quickly as possible should take the CLEP exam. For specific information on CLEP testing, please visit the website for www.collegeboard.com

Students may take the Language Placement Exam in a given foreign language only once. They may not take the test once they are taking or have taken a foreign language course at Wake Tech. If a student believes he/she may have been placed into a too low or high level class, he/she needs to contact Melania Aguirre-Rabon, Foreign Language Department Head, PLM 204H, miaguirr@waketech.edu.

Foreign language faculty reserve the right to request that a student take the Language Placement Exam. Inasmuch as some divisions have adopted more restrictive challenge examination procedures, students should make every effort to start the challenge examination process as soon as they register for the course(s). Students must take all challenge examinations no later than the 10-percent point of the semester or term. Students may obtain information on the results of their examination by inquiring at the Enrollment and Records Services Division. Positive photo identification will be required. Results of challenge examinations will be mailed after the exams have been graded and results forwarded to the Enrollment and Records Services Division.

Most challenge exams are administered within the appropriate department: however, a select number of courses including BUS 110, 121, 137, 147, 153; ENG 101; MAT 070, 080; PSY 101, 110, and 118 may be taken in the Individualized Learning Center (ILC) on main campus. Students challenging these select courses must obtain approval from the Division Dean and contact the ILC (866-5276) to schedule an appointment to take the exam. Both the Division Dean approved form # 610 and student photo identification is required for ILC administered challenge exams.

AARTS (ARMY/ACE REGISTRY TRANSCRIPT SYSTEM)

The AARTS transcript is an American Council on Education approved method of presenting military experience for academic credit. Students possessing an AARTS transcript for military educational experience after 1981 may submit the transcript for credit evaluation in any program except College/University Transfer and Health Sciences. In order to obtain a copy of their AARTS transcript, students may write: Manager, AARTS Operations Center, Ft. Leavenworth, KS 66027-5073.

CAROLINAS ASSOCIATED GENERAL CONTRACTORS ARTICULATION AGREEMENT

Articulation is the delineated process that awards college credit for certain courses completed elsewhere. The college will award college credit for specific CAGC training courses in partial fulfillment of program requirements leading to an Associate in Applied Science degree, diploma or certificate in Construction management Technology. Official transcripts will be reviewed and transfer credit recommended by the appropriate academic division deans.

CERTIFIED PROFESSIONAL SECRETARY® (CPS®) AND CERTIFIED ADMINISTRATIVE PROFESSIONAL® (CAP®) CREDENTIALS

Students applying for entry into Office Systems Technology (A25360), Office Systems Technology/Legal (A2536A), Medical Office Administration (A25310), Business Administration (A25120), and Business Administration/Human Resources Management (A2512C) and Business Administration/Electronic Commerce (A2512I) will be granted credit for some courses upon proof of having earned the CAP or CPS rating within the past six years. Additional credits in keyboarding, word processing, spreadsheets, databases, business presentations, and computer literacy may be earned at Wake Tech based on the successful completion of challenge exams in these skill areas.

DENTAL HYGIENE PROGRAM

Advanced standing is considered for students enrolled in the Dental Hygiene program if they have previously attended a Dental Assisting or Dental Hygiene program accredited by the American Dental Association, Commission on Dental Accreditation (ADA, CDA). Direct credit may be granted or a challenge exam taken for select courses within the program. More specific criteria are noted within the department’s student handbook, which is provided once admitted to the program.

EMERGENCY MEDICAL SCIENCE ADVANCED PLACEMENT THROUGH CERTIFICATION

Students may receive advanced standing in the EMS prefix classes through certification. Other EMS courses may be challenged by the student based on experience at the discretion of the EMS Department Head. The student must
score 78 percent or better to receive challenge credit. Challenges of EMS courses to gain higher certification are not allowed.

**ASSOCIATE DEGREE NURSING ADVANCED PLACEMENT FOR LPNS**

Students may receive advanced standing in the Associate Degree Nursing program by holding a current unrestricted license to practice nursing as a practical nurse in North Carolina. Students are required to take Nursing Assessment, NUR 133, prior to enrollment in the NUR course sequence. Students are advanced to 3rd term in the Program of Study. All prerequisite courses for 3rd term must be completed with a grade of C or better to be advance placed. Below is a basic guide for advanced placement for the student with a current unrestricted LPN license. Students should contact the Admissions Department and the Associate Degree Nursing Department Head for questions about advanced placement.

**Fees & Payment**

**Effective July 1, 2007**

**Note:** Tuition may be increased.

**APPLICATION FEE**

Wake Technical Community College does not charge any type of application fee.

**CLASS TUITION & FEES**

The State Board of Community Colleges establishes tuition annually; and the Wake Technical Community College Board of Trustees establishes special fees associated with some classes. Tuition and fees are listed below and are subject to change without notice.

All fees are due at the time of registration and must be received by the published payment due dates. A student may not attend classes until this has been completed. No registration will be completed until all tuition and fees have been paid in full. Students may pay:

- **BY WEB** at https://webadvisor.waketech.edu. System maintenance occurs between 1 a.m. and 5 a.m. daily. During these times, the system may not be available.
- **BY DROP BOX** located in front of the Cashier’s Office at the Wake Tech main campus, Holding Hall, 9101 Fayetteville Road, Raleigh, NC 27603
- **BY MAIL** to the Cashier’s Office, Wake Technical Community College, 9101 Fayetteville Road, Raleigh, NC 27603
- **IN PERSON** at the Cashier’s Office at the Main Campus, Health Sciences Campus, or Northern Wake Campus

Payments may be made using personal check, debit card, credit card (Mastercard or Visa) or cash. If you choose to pay by personal check, it is suggested that each student bring two checks to registration: one for registration and one for the purchase of books and supplies. All rates are subject to change by action of the North Carolina Legislature and the Wake Technical Community College Board of Trustees.

**TUITION**

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<th>North Carolina Students</th>
<th>Out-of-State Students</th>
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<tbody>
<tr>
<td>16 credit hours or more</td>
<td>$672.00 /term</td>
<td>$3,732.80 /term</td>
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</table>
| Less than 16 credit hrs. | $42.00 /credit hr.      | $233.30 /credit hr.

**FEES**

Fees are established by the Trustees of the College and are subject to change without notice.

- **STUDENT ACTIVITY FEE**
  - $20.00 per term

- **CAMPUS ACCESS FEE** – for registrations at Main, Health, Western Wake, or Northern Wake Campuses
  - $5.00 per term

- **COMPUTER USE/TECHNOLOGY FEE**
  - $1.00 per credit hour per term ($16.00 maximum)

- **PROFESSIONAL LIABILITY INSURANCE**
  - Health Sciences Students $6.00 /term

- **GRADUATION FEE**
  - Diploma/Degree Student $35.00
  - Graduation fee includes:
    - 4 Graduation Announcements
    - Purchase of Cap and Gown
    - Purchase of Diploma or Degree

- **OFFICIAL TRANSCRIPT FEE**
  - Per request $5.00 each

- **FACILITY FEE**
  - A Facility Fee of $25 per class will be charged to students attending classes at community schools locations. Fees will be collected by Wake Technical Community College at time of registration. Community school fees are established by the Wake County Public School System and are subject to change without notice.

- **TEXTBOOKS** are purchased by students as they are needed. Costs of textbooks vary, depending upon the curriculum in which the student is enrolled.

- **RETURNED CHECKS & UNPAID ACCOUNTS**
  - Any student who has a returned check shall be notified by certified letter. If the returned check is not cleared within the specified time, all academic records will be frozen until the account is cleared. Students who develop a pattern of...
payment by returned checks will have this payment option revoked. Once identified, these individuals will be required to pay by cash, money order, certified check or credit card. Our bank is authorized to present NSF checks for payment a second time which may result in additional fees being assessed.

Unpaid student accounts, including returned checks and unpaid parking tickets, will prevent graduation, granting of credit, or release of transcript.

SENIOR CITIZEN TUITION WAIVER
A legal resident of North Carolina who is at least 65 years old may register for classes at no cost for any fall, spring, or summer term. Senior citizens will also be expected to pay all regularly-assessed special fees for any course in which they enroll.

REFUND POLICY

Curriculum Classes
Refunds are processed under the North Carolina Community College System (state) refund policy.

Tuition refunds are automatically processed based on deadlines and drop dates and are mailed to the student address on file in the College’s records. Therefore, it is very important that students submit address changes to the Enrollment and Records Services Division as soon as they occur.

Refund checks are only written after the 10-percent date in the term. Checks are mailed from the Accounting Office within four (4) weeks after the 10-percent date. This date is published in all class schedules and registration information each term. All refunds are paid by check.

Tuition
Tuition is charged on a per-credit-hour basis up to a maximum of 16 credit hours per term. There is no additional tuition charge for registration in excess of maximum credit hours. Students will be eligible for refunds when course drops or withdrawals result in enrollment for less than maximum credit hours and meet the applicable conditions described below.

Regular-schedule classes that begin the first week (seven calendar days) of the semester:
1. A 100-percent refund shall be made if the student drops the class prior to the first day of the academic semester as published on the College calendar.
2. A 75-percent refund shall be made if the student drops the class on or after the first day of the semester and prior to or on the official 10-percent point of the semester, as published in the College calendar.

Classes that begin at times other than the first week (seven calendar days) of the term:
1. A 100-percent refund shall be made if the student drops the class prior to the first class meeting.
2. A 75-percent refund shall be made if the student drops the class prior to or on the 10-percent point of the class.

3. To comply with applicable federal regulations regarding refunds, federal regulations supersede the state refund regulations stated in this Rule.
4. For a class(es) which the college collects receipts which are not required to be deposited into the State Treasury account, the college shall adopt local refund policies.

Cancelled Classes
A 100-percent refund shall be made if the class in which the student is officially registered is cancelled by the College.

Military Tuition
Upon request of the student, the college shall grant a full refund of tuition and fees to military reserve and National Guard personnel called to active duty or active duty personnel who have received temporary or permanent reassignments as a result of military operations then taking place outside the state of North Carolina that make it impossible for them to complete their course requirements.

Registration Fee – Self-Supporting Classes
The registration fee for self-supporting classes is charged separately from (in addition to) the tuition charges. Therefore, refunds for these classes are also calculated separately. Otherwise, the policies and deadlines listed prior also apply to self-supporting classes.

To be eligible for a refund a student must officially drop the class, using WebAdvisor or via the Registration Change Request form if the registration system has closed for the term, by the deadlines indicated.

Fees
When the student withdraws entirely and the tuition refund is approved by the College as set forth above, student activity, community schools, and graduation fees will be refunded in total.

Death of a Student
In the event of a student’s death, all tuition and fees the student had paid for that term may be refunded to the estate of the deceased.

Books
Books will be accepted for full refund when the student withdraws from the College or drops a class on or before the 10-percent point in the semester, provided the books have not been marked in or otherwise defaced. Requests for book refunds are to be presented with the sales receipt by the student by the 10-percent point in the semester to the Bookstore Manager, who is authorized to accept or reject the request for refund.

Website: http://bookstore.waketech.edu
Registration Dates

Students begin registering at different times, depending on their status as (1) degree-seeking, certificate-seeking, or diploma-seeking, (2) newly admitted, (3) special students (non-degree seeking), or (4) high school dual enrollment/early admission. Registration windows and other important dates are located on the Registration Calendar located in this section or at http://calendars.waketech.edu. For a general overview of important dates for the academic year, please see the Academic Calendar at the end of this section. Please note that this calendar is subject to change, and the calendar’s web address should be viewed for the final calendar dates.

Residency Classification

To qualify for in-state tuition, a legal resident must have maintained his or her domicile in North Carolina for at least the 12 months immediately prior to his or her classification as a resident for tuition purposes. To be eligible for such classification, the individual must establish that his or her presence in the state during such 12-month period was for the purpose of maintaining a bona fide domicile rather than for purposes of mere temporary residency incident to education.

Aliens are subject to the same considerations as U.S. citizens in the determination of residency status for tuition purposes, except that holders of B, F, J, M, P, Q, or S visas may not be considered residents for tuition purposes and their dependent relatives are not eligible for a tuition rate less than the out-of-state rate. Holders of E, H, L, O, or R visas may (under certain circumstances) be eligible for the in-state tuition rate.

Regulations concerning residency classification for tuition purposes are set forth in detail in A Manual to Assist the Public Higher Education Institutions of North Carolina in the Matter of Student Residence Classification for Tuition Purposes. Each enrolled student is responsible for knowing the contents of this Manual, which is the controlling administrative statement of policy on this subject. Copies of the Manual are available for student inspection in the Enrollment and Records Services Division.

Determination of student resident status for tuition purposes:
1. Upon applying for admission to the College, each prospective student is classified as a resident or non-resident of North Carolina for tuition purposes, according to the student’s declaration at the time of application.
2. In the case of an individual who is originally classified as non-resident and later requests reclassification to resident status, the individual will be asked to complete a “Residency and Tuition Status Application.” Along with the completed application, two proofs must be provided support a claim for in-state status. This form is available on the College’s website. An Assistant Registrar will review

the application, make a determination about residency status, and advise the individual in writing of the decision. http://forms.waketech.edu/ss/427ncresapp.pdf

Procedures for Hearing Appeals

In the event that an individual disagrees with the Assistant Registrar’s ruling on his/her residency status, the ruling may be appealed to the College Residency Committee, which has been established by the President of Wake Technical Community College. The appeal must be made in writing to the Vice President of Student Services.

Student Completion

Information about student completion in each of the academic programs is available to students online at http://www.nces.ed.gov/IPEDS/COOL. Other related information is available via the Wake Tech website at http://planningandresearch.waketech.edu/ie/rrcspf.php. The availability of this information satisfies the federal requirement regarding dissemination of student consumer information.

We are here to help!

LOCATION
Main Campus (401 South) in the Student Services Building, Room 128

PHONE
(919) 866-5420

WEBSITE
http://admissions.waketech.edu
# Wake Technical Community College
## 2008-2009 ACADEMIC CALENDAR SUMMARY

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SEMESTER STARTS</td>
<td>8/18/08</td>
<td>8/18/08</td>
<td>10/20/08</td>
<td>1/7/09</td>
<td>1/7/09</td>
<td>3/5/09</td>
<td>5/18/09</td>
<td>5/18/09</td>
<td>6/23/09</td>
</tr>
<tr>
<td>Pre-registration period opens</td>
<td>3/24/08</td>
<td>3/24/08</td>
<td>3/24/08</td>
<td>10/27/08</td>
<td>10/27/08</td>
<td>10/27/08</td>
<td>3/30/09</td>
<td>3/30/09</td>
<td>3/30/09</td>
</tr>
<tr>
<td>Pre-registration period ends</td>
<td>5/1/08</td>
<td>5/1/08</td>
<td>5/1/08</td>
<td>12/1/08</td>
<td>12/1/08</td>
<td>12/1/08</td>
<td>5/1/09</td>
<td>5/1/09</td>
<td>5/1/09</td>
</tr>
<tr>
<td>Pre-registration period payment deadline</td>
<td>7/1/08</td>
<td>7/1/08</td>
<td>7/1/08</td>
<td>12/1/08</td>
<td>12/1/08</td>
<td>12/1/08</td>
<td>5/1/09</td>
<td>5/1/09</td>
<td>5/1/09</td>
</tr>
<tr>
<td>Registration period opens</td>
<td>5/2/08</td>
<td>5/2/08</td>
<td>5/2/08</td>
<td>12/2/08</td>
<td>12/2/08</td>
<td>12/2/08</td>
<td>5/2/09</td>
<td>5/2/09</td>
<td>5/2/09</td>
</tr>
<tr>
<td>Registration period ends</td>
<td>8/17/08</td>
<td>8/17/08</td>
<td>8/17/08</td>
<td>1/6/09</td>
<td>1/6/09</td>
<td>1/6/09</td>
<td>5/17/09</td>
<td>5/17/09</td>
<td>5/17/09</td>
</tr>
<tr>
<td>Registration period payment deadline</td>
<td>8/17/08</td>
<td>8/17/08</td>
<td>8/17/08</td>
<td>1/6/09</td>
<td>1/6/09</td>
<td>1/6/09</td>
<td>5/17/09</td>
<td>5/17/09</td>
<td>5/17/09</td>
</tr>
<tr>
<td>Late registration opens *Payment due same day as registration</td>
<td>8/18/08</td>
<td>8/18/08</td>
<td>8/18/08</td>
<td>1/7/09</td>
<td>1/7/09</td>
<td>1/7/09</td>
<td>5/18/09</td>
<td>5/18/09</td>
<td>5/18/09</td>
</tr>
<tr>
<td>Late registration ends</td>
<td>8/22/08</td>
<td>8/22/08</td>
<td>10/21/08</td>
<td>1/13/09</td>
<td>1/13/09</td>
<td>1/13/09</td>
<td>3/6/09</td>
<td>5/22/09</td>
<td>5/19/09</td>
</tr>
<tr>
<td>Deadline for dropping with 100% refund</td>
<td>8/17/08</td>
<td>8/17/08</td>
<td>10/19/08</td>
<td>1/6/09</td>
<td>1/6/09</td>
<td>1/6/09</td>
<td>3/4/09</td>
<td>5/17/09</td>
<td>5/17/09</td>
</tr>
<tr>
<td>Deadline for dropping with 75% refund (10% point of semester)</td>
<td>8/27/08</td>
<td>8/27/08</td>
<td>10/23/08</td>
<td>1/16/09</td>
<td>1/16/09</td>
<td>1/16/09</td>
<td>3/10/09</td>
<td>5/22/09</td>
<td>5/22/09</td>
</tr>
<tr>
<td>Deadline for dropping with W grade (60% point of semester)</td>
<td>10/29/08</td>
<td>9/19/08</td>
<td>11/20/08</td>
<td>3/23/09</td>
<td>2/10/09</td>
<td>4/16/09</td>
<td>6/29/08</td>
<td>6/8/09</td>
<td>7/14/09</td>
</tr>
<tr>
<td>Mid-term break</td>
<td>10/9/08-10/14/08</td>
<td>10/9/08-10/14/08</td>
<td>n/a</td>
<td>3/16/09-3/20/09</td>
<td>n/a</td>
<td>3/16/09-3/20/09</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Other breaks</td>
<td>9/1/08; 11/26/08-11/30/08</td>
<td>9/1/08</td>
<td>11/26/08-11/30/08</td>
<td>1/19/08; 4/9/08-4/10/09</td>
<td>1/19/09</td>
<td>4/9/09-4/10/09</td>
<td>5/25/09; 7/3/09</td>
<td>5/25/09</td>
<td>7/3/09</td>
</tr>
<tr>
<td>Exam days</td>
<td>12/11/08-12/17/08</td>
<td>n/a</td>
<td>n/a</td>
<td>5/4/09-5/8/09</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Grades submitted by faculty on WebAdvisor</td>
<td>12/22/08</td>
<td>10/24/08</td>
<td>12/22/08</td>
<td>5/13/09</td>
<td>3/11/09</td>
<td>5/13/09</td>
<td>7/30/09</td>
<td>6/29/09</td>
<td>7/30/09</td>
</tr>
<tr>
<td>Grades available to students on WebAdvisor</td>
<td>12/23/08</td>
<td>10/27/08</td>
<td>12/23/08</td>
<td>5/14/09</td>
<td>3/12/09</td>
<td>5/14/09</td>
<td>7/31/09</td>
<td>6/30/09</td>
<td>7/31/09</td>
</tr>
</tbody>
</table>

*Subject to revision to meet changing conditions. Continuing Education schedule may vary. Consult the Schedule of Classes for applicable dates and deadlines.
1. Progress of Basic Skills Students: (Performance Standard: 75%) (2006-2007)

<table>
<thead>
<tr>
<th>Total FTE</th>
<th>Total Served in Literacy</th>
<th>Completed a Level or Goal</th>
<th>Progressing Same Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>11,166</td>
<td>7,762</td>
<td>5%</td>
<td>53%</td>
</tr>
</tbody>
</table>

Exit Non-Completers

<table>
<thead>
<tr>
<th>Moved to a Higher Level</th>
<th>Composite Progress Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>15%</td>
<td>27%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aggregate Institutional Rate</th>
<th>Number of Exams with a Passing Rate Less Than 70%</th>
</tr>
</thead>
<tbody>
<tr>
<td>87%</td>
<td>1</td>
</tr>
</tbody>
</table>

Number Tested | Percent Passed
--- | ---
Basic Law Enforcement Training | 53 | 87%
Dental Hygiene | 20 | 100%
Emergency Medical Technician (EMT) | | |
EMT | 127 | 94%
EMT-I | 14 | 79%
EMT-P | 16 | 100%
Nursing (Registered Nursing) | 71 | 83%
Radiography | 32 | 100%
Real Estate (Sales) | 33 | 52%


<table>
<thead>
<tr>
<th>Total Number of Test Takers</th>
<th>Total Number Passing</th>
<th>Aggregate Institutional Rate</th>
<th>Number of Exams with a Passing Rate Less Than 70%</th>
</tr>
</thead>
<tbody>
<tr>
<td>366</td>
<td>320</td>
<td>87%</td>
<td>1</td>
</tr>
</tbody>
</table>

3. Performance of College Transfer Students (Performance Standard: 83% ≥ 2.0) Percent of 2005-2006 College Transfer Students with a GPA of greater than or equal to 2.0 after two semesters at a UNC Institution

<table>
<thead>
<tr>
<th>24 or More Semester Hours</th>
<th>Associate Degree Recipients</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>% ≥ 2.0</td>
<td>Number</td>
</tr>
<tr>
<td>272</td>
<td>80.5%</td>
<td>145</td>
</tr>
</tbody>
</table>
4. Passing Rates of Students in Developmental Courses (Performance Standard: 75%) (2006-2007)

<table>
<thead>
<tr>
<th></th>
<th># Completed</th>
<th>% Passed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>695</td>
<td>87%</td>
</tr>
<tr>
<td>Math</td>
<td>3,400</td>
<td>68%</td>
</tr>
<tr>
<td>English</td>
<td>1,456</td>
<td>72%</td>
</tr>
<tr>
<td>Total</td>
<td>5,551</td>
<td>71%</td>
</tr>
</tbody>
</table>

5. Success Rate of Developmental Students in Subsequent College-Level Courses (Performance Standard: 80% of students who took developmental courses will pass the “gatekeeper” English and/or Mathematics course for which the developmental course serves as a prerequisite) (2006-2007)

<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th>Math</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>222</td>
<td>378</td>
<td>600</td>
</tr>
<tr>
<td>% Passed</td>
<td>85%</td>
<td>89%</td>
<td>88%</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Completers</td>
<td>453</td>
<td>93%</td>
</tr>
<tr>
<td>Completers</td>
<td>632</td>
<td>98%</td>
</tr>
<tr>
<td>Total</td>
<td>1085</td>
<td>96%</td>
</tr>
</tbody>
</table>

7. Curriculum Student Retention, Transfer, and Graduation (Performance Standard: 65% of Fall degree seeking students will either re-enroll, transfer, or graduate by the subsequent Fall) (2006-2007)

<table>
<thead>
<tr>
<th>Total Cohort</th>
<th>% Graduated</th>
<th>% Return</th>
<th>% Transfer</th>
<th>% Graduate, Return, or Transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,268</td>
<td>10%</td>
<td>52%</td>
<td>7%</td>
<td>69%</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Number of Survey Respondents</th>
<th>Percent Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,805</td>
<td>97%</td>
</tr>
</tbody>
</table>
The Wake Tech Financial Aid program exists to ensure that no qualified student will be denied the opportunity to continue his or her education because of economic disadvantages. Through a program of scholarships, grants, work-study, and loans, students enrolled at the College are able to supplement their own resources and those of their families to complete a course of study. For detailed information on financial aid programs offered at Wake Technical Community College, and how they are distributed, refer to the publication available in the Financial Aid Office or online at http://financialaid.waketech.edu.

Financial Aid Application
To apply for financial aid you must complete the Free Application for Federal Student Aid (FAFSA). The application can be obtained from the Wake Technical Community College Financial Aid Office or your local high school guidance counselor. The application may also be completed online at www.fafsa.ed.gov.

DEADLINE & “PRIORITY” DATES

<table>
<thead>
<tr>
<th>In order to register during:</th>
<th>You should apply for Financial Aid by:</th>
<th>Your Financial Aid file must be complete by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Registration</td>
<td>May 1</td>
<td>June 1</td>
</tr>
<tr>
<td>Spring Registration</td>
<td>October 1</td>
<td>November 1</td>
</tr>
<tr>
<td>Summer Registration</td>
<td>April 1</td>
<td>May 1</td>
</tr>
</tbody>
</table>

“Priority” Deadline to be considered for all available annual resources: March 15 (date received by)

If your financial aid eligibility has not been determined or your financial aid file is not complete by the dates listed above you are responsible for payment of your tuition and fee charges and bookstore charges. Once your eligibility for financial aid has been determined you will receive an award letter that will provide information regarding disbursement of financial aid funds.

STUDENT RESPONSIBILITIES
To receive Federal Title IV assistance and state assistance:
- Students must demonstrate financial need.
- Students must have a high school diploma or a General Education Development (GED) certificate on file with the College.
- Students must be enrolled at least half time (6 credit hours) in an eligible program of study.
- The student must be a U.S. citizen or an eligible non-citizen.
- The student must have a valid Social Security number.
- Students must maintain satisfactory academic progress.
- Students must sign a statement on the FAFSA certifying that federal student aid will be used for educational purposes only.
- Students must sign a statement on the FAFSA certifying that you are not in default on a federal student loan and that you do not owe money back on a federal student grant.
- Students must answer a question on the FAFSA reporting whether you have been convicted of possessing or selling illegal drugs.
- Students must register with Selective Service, if required.

Grants
A grant is a gift that does not have to be repaid.

FEDERAL PELL GRANTS
PELL is an entitlement program, which means that all students who are eligible will receive PELL Grant awards. Applicants must be U.S. citizens or eligible non-citizens carrying at least a half-time (six credit-hours) course load. The amount of the grant is determined by the Department of Education.

ACADEMIC COMPETITIVENESS GRANTS (ACG)
To qualify, a student must be PELL-eligible, a U.S. citizen, and enrolled full-time in a degree-granting program. Academic Competitiveness Grants will be given to first- and second-year students who have taken a rigorous high school curriculum and have not been enrolled previously in an undergraduate program. First-year grant recipients must have graduated high school after January 1, 2006, and second-year grant recipients graduate after January 1, 2005. Second-year grant recipients must also retain, at least a 3.0 overall GPA.

FEDERAL SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANTS (FSEOG)
Federal SEOG awards range from a minimum of $100 to a maximum of $4,000 a year. This federal program does not require employment or repayment. Due to limited funding, the maximum award at Wake Tech is limited to $800 per academic year.
FEDERAL WORK STUDY PROGRAM
The purpose of this program is to extend part-time employment opportunities to students who are in need of financial assistance to pursue a course of study. Students generally work 10-15 hours per week. Awards are based on available funding. You must complete the Free Application for Federal Student Aid (FAFSA) in order to determine eligibility.
You must be enrolled at least half-time in an eligible diploma or associate degree program. International students are required to be enrolled full-time during fall and spring semesters and at least half-time during Summer term. College Work Study payments are made on a monthly basis after a time record has been signed, approved, and processed by the Financial Aid Office.
- Maintain a cumulative grade-point-average of at least 2.0
- Meet all satisfactory academic progress guidelines for federal student aid.

NORTH CAROLINA COMMUNITY COLLEGE GRANT PROGRAM (NCCCG)
The North Carolina Community College Grant is a state grant program available to the neediest students whose (a) Federal Pell Grants are less than the “required educational expenses” and (b) estimated income tax liability (according to federal guidelines) is too low for the family to be eligible for the Federal Tax Credit. Students must complete the Free Application for Federal Student Aid to be considered for this grant. Student must be a North Carolina resident enrolled for at least six (6) credit hours in an eligible curriculum program.

NORTH CAROLINA STUDENT INCENTIVE GRANT PROGRAM (NCSIG)
The North Carolina Student Incentive Grant is a state and federal grant program available to exceptionally needy students. It is administered jointly by the College Foundation, Inc., and the College Financial Aid Officer. Students must be North Carolina residents and must apply by March 15 of each year for the upcoming fall semester. Students must be enrolled full-time in an eligible curriculum program.

NORTH CAROLINA EDUCATION LOTTERY SCHOLARSHIP (NCELS)
Student must be a North Carolina resident enrolled for at least six (6) credit hours in an eligible curriculum program. Student must meet all eligibility requirements of a Federal Pell grant, except the Expected Family Contribution (EFC) requirement. Students who have already earned baccalaureate (four year) college degrees are not eligible.

EDUCATION ACCESS REWARDS NORTH CAROLINA SCHOLARS FUND (EARN)
The student must qualify as a legal resident of North Carolina and the United States and must qualify as a North Carolina resident for tuition purposes. The student must be enrolled full-time and be enrolled in college for the first time, exclusive of any college credits earned while in high school, at a North Carolina public university or a community college within seven months of high school graduation or obtaining a GED. The student must be classified as "dependent" for Federal Title IV programs or is a ward or dependent of the court. The student must demonstrate total family income not exceeding 200% of the applicable federal poverty guideline. The student must meet all other eligibility requirements for the Federal Pell Grant. In order to retain eligibility for a grant for a second year, the student must meet the satisfactory academic progress standards established by the eligible college or university in which the student is enrolled. The student may not receive a grant through this program for more than the equivalent of two academic years.

Loans
A loan is money received that must be repaid to the lender.

FEDERAL FAMILY EDUCATIONAL LOAN PROGRAMS (FFELP)
- Federal Subsidized Stafford Loan Program
  To qualify for these loans, students must demonstrate financial need as a result of filing an FAFSA. Eligibility for this loan is determined by the institution, but funds are actually provided and repayments are collected by outside lenders who participate in this program. The amount that may be borrowed per year is set by the federal government and ranges from $3,500 to $5,500 for undergraduates, depending on the student's grade level. The interest on this loan is paid by the government while the student is enrolled on at least a half-time basis. The student becomes responsible for the interest and principal payments six months after graduating or dropping below half-time enrollment.
- Federal Unsubsidized Stafford Loan Program
  The only difference between this loan and a Subsidized Stafford Loan is that the Unsubsidized Stafford Loan is not need-based, and students are charged interest on these loans from the date of first receipt of loan funds. Although students must complete an FAFSA to qualify for an Unsubsidized Stafford Loan, eligibility is not determined based on need but on the cost of attending minus other expected financial aid. Annual maximums, interest rates, and repayment provisions are the same as Subsidized Stafford Loans.
- Federal PLUS Loan for Parents
  Parents of a dependent undergraduate student may apply for a PLUS loan to help meet the student's

2008-2009 | Wake Technical Community College
costs of attendance not covered by other financial aid. Interest rates and repayment provisions on PLUS loans are generally more favorable than other consumer loans available for educational expenses. A FAFSA need not be completed, but parents must submit a PLUS Request form to the Financial Aid Office for certification of the student’s cost of attendance as well as other anticipated financial aid. PLUS applications are available in the Financial Aid Office or may be obtained from several participating lenders. Repayment starts as soon as funds are disbursed.

**LOAN PROGRAM FOR HEALTH, SCIENCE, AND MATHEMATICS**

In an effort to encourage and provide financial assistance to North Carolinians desiring career opportunities in the health, science, and mathematics disciplines, the General Assembly makes appropriations available for loans for the programs cited below:

- **Health:** Allied Health; Health Sciences
- **Science:** Computer and Information Science, Engineering and related technologies, Life Sciences, and Physical Science
- **Mathematics:** Mathematics (General, Pure, and Applied)

**NORTH CAROLINA COMMUNITY COLLEGE LOAN PROGRAM**

The North Carolina Community College System Office makes allocations to each community college for short-term loans to assist students who demonstrate financial need. Each community college administers the Loan Program according to its policies and procedures.

Students should:
- Present their needs to the financial aid director
- Complete an NCCC Loan Program Application

Maximum loans at Wake Technical Community College are $400 and must be repaid within 60 days from the first day of the semester.

**Scholarships**

Scholarships are available to students in vocational, technical, and college/university transfer programs. These scholarships are awarded annually in varying amounts by civic clubs, professional organizations, industrial groups, and hospital organizations. Although scholarships are awarded primarily upon the basis of financial need, a student applying may have to meet certain defined requirements to qualify for specific awards. Evidence of scholastic potential, achievement, and good character may be required. Applications and further information may be obtained from the Financial Aid Office.

**Disbursement of Aid**

The credit balance remaining after tuition, fees and book charges are deducted from your financial aid will be mailed to you. Class attendance will be verified before a refund check is issued to a student. All students receiving Federal or State financial aid funds (PELL, NCCCG, NCELS, EARN, Stafford Loans, PLUS Loan) must submit an attendance verification form. The schedule for 2008-09 refunds checks is as follows:

- Fall Semester 2008: September 26, 2008
- Spring Semester 2009: February 17, 2009
- Summer Term 2009: June 15, 2009

Students who do not receive a refund check on the dates listed above will receive their refund the next check writing cycle following verification of attendance. Please contact Financial Aid Office for check dates.

**OTHER REPAYMENT INFORMATION**

If a student uses Title IV financial aid to register for a class or classes and does not attend the class (NA) but fails to drop the class, the College is required by Federal law to refund all tuition and fees to the appropriate financial aid program. The student is then responsible for the tuition and fee charges. If the student also charged books and non-book merchandise for the class the student is responsible for returning the books and merchandise to the bookstore. If the student fails to do so, the student is responsible for all charges. Failure to pay the required charges will result in a hold being placed on school records.

Therefore, it is important for you to remember to cancel your registration if you decide not to attend. It is your responsibility to cancel your registration.

**TITLE IV REFUNDS**

The Title IV repayment policy applies when a student receives financial aid funds and subsequently withdraws either officially or unofficially from school prior to the 60 percent point of a given semester/term. In this case, the student has received financial aid to cover educational expenses for an enrollment period; since the student has ceased to be enrolled at least half time, the funds can no longer be considered to be for education purposes, and the student may owe a repayment to the Pell Grant, SEOG, or Stafford Loan Program. Such repayment is to be determined on the basis of criteria set forth by the U.S. Secretary of Education.

If you are considering withdrawing from WAKE TECHNICAL COMMUNITY COLLEGE we strongly urge you to speak to a Financial Aid Counselor to determine how withdrawing may impact you.
Enrollment Status
In order to receive the maximum Pell Grant, a student must be enrolled for 12 credit hours or more each semester in an eligible curriculum of study. Depending on eligibility a reduced Pell Grant can be received by students who are enrolled three-fourths time (9-11 credit hours), one-half time (6-8 credit hours), or less than half-time (1-5 credit hours). Only courses in your program of study can be included when determining your award for the semester. For example, if you are enrolled for twelve credit hours but you are taking a five credit hour course that is not part of your program of study, you will receive PELL Grant funds for seven credit hours only and not twelve credit hours although you are enrolled for twelve hours.

Financial Aid for Students with Disabilities
Vocational Rehabilitation is a public service program operated through the Division of Vocational Rehabilitation, Department of Human Resources. Vocational Rehabilitation offers several financial resources to assist individuals with disabilities. Students may be eligible for financial assistance to complete a course of study to meet individualized needs. Prospective students should contact the nearest Division of Vocational Rehabilitation Services office.

Satisfactory Academic Progress Policy
This policy is effective for periods of enrollment beginning after July 1, 2007 and is subject to periodic review. All students regardless of when they initially began enrollment are subject to the new Satisfactory Academic Progress Policy.

Federal regulations require that students receiving Federal financial aid maintain satisfactory progress as defined by the College. Wake Technical Community College has elected to apply the standards set forth below to all students who receive aid from any of the following programs: Federal Pell Grant, Federal Supplemental Educational Opportunity Grant (FSEOG), Federal Stafford Loan, Federal Work-Study, North Carolina Community College Grant, North Carolina Student Incentive Grant, North Carolina Lottery Grant, North Carolina Community College Short-Term Loan Program and institutional aid. The standards against which applicants for and recipients of financial assistance are measured include both qualitative and quantitative measures. With the exception of students placed on probation/conditional status, or enrolled in a certificate or diploma program satisfactory progress will be monitored at the end of each academic year. Students enrolled in diploma or certificate programs or placed on probation/conditional status will be reviewed at the end of each semester of enrollment. Wake Technical Community College’s statement of academic progress will be used as the basis for determining a student’s status for Title IV funds including student loans. Any student whose cumulative grade-point average falls below the minimum standards outlined in the College’s Satisfactory Academic Progress policy will be placed on probation. This may affect any Title IV aid program for one semester, including Pell Grant, Supplemental Educational Opportunity Grant, College Work Study, and Stafford and PLUS loans. The Financial Aid Office notifies the student by letter of probationary status. At the end of the probationary semester, the student’s cumulative average must meet the requirements. Title IV aid may be withheld until the standards are met.

QUALITATIVE MEASURE: CUMULATIVE GRADE POINT AVERAGE REQUIREMENT
The student must maintain a grade point average at or above the minimum. Any student whose cumulative grade-point average falls below a 2.0 will be placed on conditional status/probation.

QUANTITATIVE MEASURE: COMPLETION RATE REQUIREMENT
The student must successfully earn 67% of the cumulative credit hours attempted to meet the minimum requirement. Example if the student has 60 hours during their enrollment they must successfully complete 40 hours (60 hrs attempted x .67%=40). Successful completion is defined as receiving a grade of A, B, C, D, or P. Completion rate is calculated by dividing the number of hours successfully completed by the number of hours attempted.

MAXIMUM TIMEFRAME
A student’s maximum time frame to complete a program is 150% of the published length of the program. For example if the 75 semester hours are required to complete a degree, the student may attempt a maximum of 113 hours before the
student exceeds his eligibility for financial aid (i.e. 75 x 1.5 = 113). A student may add up to one academic year of credit (30 semester hours) for required remedial coursework.

**TREATMENT OF SELECTED GRADES**

**Withdrawals:** Credit hours in which a student receives a grade of “W”, “WP”, or “WF” are included in the number of attempted hours, but do not count toward successfully completed hours. Therefore students who withdraw may have difficulty meeting the satisfactory academic progress requirements.

**Incompletes:** Students will not be affected by “incompletes” at the time of the review.

**Transfer Credit:** Students transferring from another institution will be considered making satisfactory progress at the time of their enrollment. A student’s maximum time to receive financial aid will be reduced by the equivalent transfer of credit hours towards his/her degree.

**Audits and Credit by Examination:** An audit (AU) grade is not considered attempted coursework. It is not included in the grade point average or completion rate determinations. A student cannot receive financial aid for courses that he or she audits or receives credit by examination (CR).

**Repeated Courses:** In accordance with WAKE TECH policy a student is permitted to repeat any course twice. The last grade earned is calculated in the GPA. For financial aid purposes the previous hours attempted and earned will continue to be counted in student’s cumulative total of hours earned and attempted.

**Summer Session:** Credit hours attempted and earned during summer session will be included in the calculation of satisfactory academic progress, just as any other enrollment period.

**ELIGIBILITY STATUSES**

**Satisfactory:** Satisfactory status is achieved when all criteria explained above are met.

**Probation/Conditional Status:** Students not currently on probation who do not have the required grade point average and/or who have not successfully completed at least 67% of their attempted credit hours will be placed on probation for the following semester. Satisfactory progress will be monitored at the end of the semester to determine if student meet the standards of progress and is eligible to continue to receive financial aid.

**Termination:** Students on financial aid probation/conditional status who have not successfully attained at least a cumulative 67% percent completion rate and/or earned the minimum required grade average shown listed above at the conclusion of the probation period will have their financial aid terminated.

Students who have attempted the maximum allowable credit hours for their program of study will have their financial aid terminated.

**Notification of Financial Aid Termination or Probation:** The Financial Aid Office will send a warning letter to any student who is placed on probation /conditional status or a termination letter to any student who is no longer eligible for financial aid. However, failure to receive a letter does not negate a termination or probation status.

**Regaining Eligibility:** Students who attend school (without federal financial aid) may regain financial aid eligibility by achieving a 67% completion rate and or earning the required GPA. A student may request reconsideration of eligibility for financial aid by submitting a written request to the Financial Aid Office once all requirements are met. Students who exceed the maximum allowable time frame to complete a program of study must appeal by using a student petition and provide a graduation plan signed by their academic advisor. If the plan is considered reasonable, the student will receive financial aid on probation for one or more semesters until the degree is completed.

**Petition of Waiver of Satisfactory Academic Progress Standards:** Students who have been disqualified from receiving financial aid may petition the Financial Aid Office to waive the satisfactory progress requirements only where there are special circumstances present. A student may submit written documentation to the Financial Aid Office that explains unavoidable circumstances that have affected academic performance. Circumstances may include, but are not limited to: illness of student or immediate family member; death of family member; full-time employment; and the length of time since last enrollment. If a student is allowed to continue due to a mitigating circumstance, the student will be given an additional increment of time to meet the standard requirements.
Returning students are evaluated on a continuing basis from the last enrollment unless a mitigating circumstance is considered. Returning students who were previously enrolled under other than the current academic progress policy will be required to meet the standards of the current policy upon returning.

**Complete academic record:** In order to measure a student’s satisfactory progress toward degree, diploma, or certificate requirements, the student’s total academic record at Wake Tech must be evaluated whether or not the student received aid for the entire time of enrollment. Additionally any courses with grades of W or WF that are granted forgiveness by WAKE TECH must still be included in students cumulative record when determining satisfactory academic progress standards. When students complete course work for more than one major, academic progress standards must be met to receive student aid.

**Appeals**

Any action relative to a student's financial aid for reasons of academic progress may be appealed. A student may appeal any action taken related to academic progress for receiving aid by submitting to the Financial Aid Office a written statement of appeal no later than 48 business hours of the time a notice of action is received by the student. If an action taken proves to be contrary to written policy used by the Financial Aid Office, or if information obtained from the Registrar’s Office proves to be incorrect, or if in any way the action proves to be unfair treatment or not in compliance with federal regulations, the student’s aid may be reinstated. If the appeal is not resolved in the Financial Aid Office, the student may appeal/grieve the action through the College’s Grievance procedure contained in the Student Handbook.

The person designated by Wake Tech to provide financial aid information to students is the Financial Aid Director. Effective May 1 office hours are 8 a.m. to 7 p.m. Monday-Thursday and 8 a.m. to 4 p.m. on Friday. The telephone number is (919) 866-5417.

**Veteran Affairs (VA)**

Website: [http://veterans.waketech.edu](http://veterans.waketech.edu)

Most of the programs offered by the College are approved for training veteran students, Ready Reservists, North Carolina National Guard members, and the spouses and children of deceased or 100-percent disabled veterans. Veterans desiring to train using the benefits of the G.I. Bill must first establish their eligibility with the Department of Veteran Affairs (VA). Veterans separated from service within the last ten years who hold an Honorable Discharge usually qualify for G.I. Bill training. In general, 36 months of full-time training is provided.

Certain military personnel on active duty are also eligible for benefits under the G.I. Bill. Interested servicepersons should contact their duty station Education Officer for details prior to applying for admission to the College. Veterans attending Wake Technical Community College under the G.I. Bill receive a monthly reimbursement from the Department of Veterans Affairs. The course load taken determines the amount; for example, to receive the full VA benefit, the veteran must be enrolled for a minimum of 12 credit hours. A veteran carrying half a full-time course load would receive half the benefit. Veterans should contact the College VA certifying official (Registrar) for detailed information.

Veterans are accorded the same rights and must meet all academic requirements and maintain the same academic standards as any student attending Wake Technical Community College. Veterans will not be certified to the VA until all entrance/admissions criteria, including high school and college (if applicable) official transcripts, are in the student’s file. All transfer credit from prior college experience that has been evaluated and granted must also be on file.

Veterans must meet the grade-point average (GPA) standards established in “Academic Probation and Suspension.” A veteran failing to meet GPA standards at the end of a term will be placed on academic probation. A veteran failing to meet the GPA standards at the end of the next term in attendance will have his enrollment certification to the VA terminated. Certification of enrollment to the VA will not be restored until GPA standards are met, and then only upon request by the veteran.

Veterans dropped from a course by the College for missing all scheduled class meetings in any ten consecutive academic day period will be immediately reported to the VA, and adjustments, as appropriate, will be made in G.I. Bill payments.
POLICY FOR VETERANS TO ENROLL IN NON-TRADITIONAL STUDY COURSES SUCH AS TELECOURSES, INTERNET, VIDEOCASSETTE, AND INDEPENDENT STUDY

- In order to maintain a high quality of educational and academic excellence, all VA students receiving educational benefits from the Department of Veterans Affairs will meet the following criteria before enrolling in non-traditional course(s).
- The veteran must first meet with the VA certifying official before registration, so that proper information and procedures can be discussed.
- The veteran should review the Distance Education Student Self-Assessment on the Wake Tech website or in the class schedules publication to determine if he/she is suited to this style of learning.
- The veteran must have completed any remedial work needed as determined by the College’s placement test.
- The course must be required in the veteran’s current program.
- The veteran must pass each non-traditional course attempted in order to enroll in a subsequent study course.

No additional charge is required for enrolling in non-traditional course(s).

CLINICAL ASSIGNMENT POLICY

It is the policy of Wake Technical Community College that no student engaged in a Health Sciences curriculum may refuse any clinical assignment considered normal clinical duty by the host provider. Refusal of a clinical assignment by a student will be considered grounds for the immediate termination of the student from his/her curriculum. The student will not be accepted into any other health-related curriculum.

Transfer Students

Any student who transfers to Wake Technical Community College from any other school beyond high school must provide official transcripts from all schools attended, including high school. The transcripts must be evaluated by Wake Technical Community College before there can be an offer of financial aid.
STUDENT SERVICES / STUDENT LIFE

Academic Support and Opportunities

ACADEMIC ADVISEMENT

The purpose of the faculty advising system is to help provide the most effective, helpful educational environment possible. Every curriculum student is assigned a faculty advisor. Students in the A.A. or A.S. College/University Transfer programs are assigned to the College/University Transfer Advising Center. All other students who place into Pre-Curriculum courses are assigned to the Pre-Curriculum Advising Center. The advisors are available to students through regularly scheduled office hours to counsel students concerning problems they may have. Students have the responsibility for planning their programs of study with the help of their faculty advisor. This involves (1) keeping up to date with College and division curriculum requirements; (2) keeping informed of academic deadlines and changes in academic policies; and (3) consulting with the faculty advisor at each pre-registration period and at other times as needed.

BOOKSTORE

Website: http://bookstore.waketech.edu

Students are encouraged to take advantage of online ordering and home delivery.

Students may purchase from the College Bookstore necessary books, software, computer and general supplies, and other items such as stationery, class rings, and pins. Book buy back available for all books with market value at any time during the semester regardless of the source of purchase.

Normal hours of operation are Monday - Thursday, 8 a.m. - 8 p.m., and Friday, 8 a.m. - 4:30 p.m. Special hours of operation are posted on the Bookstore door as needed.

Students should be aware of the following operational policies of the Bookstore:

Required textbooks for a particular term are available through the drop/add period. Immediately following the tenth academic day of a semester, most of the unsold books are returned to the publishers.

Cash refunds for returned books will only be authorized with presentation of the Bookstore cash register receipt. Books returned for refund must be new and in undamaged condition containing no writing or marks. Requests for refund for books must be made during the first ten academic days of the semester.

A special order for a book may be placed through the Bookstore by furnishing the title, author, edition, and publisher of the book. Students may purchase books online at http://bookstore.waketech.edu
CAREER CENTER
Career Center counselors provide assistance to Wake Tech students in defining goals and establishing a career path. Counselors coach students through the steps that lead them towards making well-considered and better informed decisions about careers, majors, colleges, and life directions. Enrolled students may receive guidance in self-discovery, exploring and evaluating career possibilities, and planning educational programs that reflect their interests or goals.

The Center maintains useful reference materials that students and staff may easily access. Resources include:

- Personalized, computerized or pen and paper assessments
- Reference books (e.g., the Outlook Handbook, ONET, Vocational Biographies, Career Focus series, state and national career guides
- Career videos and software
- Occupational and career Internet links
- College catalogs and videos

The Center provides an educational setting for students and staff who wish to enhance their understanding of the world of work and career trends. In collaboration with faculty, workshops related to career exploration and preparation are offered in group and classroom settings.

Location: Student Services Building, SS143
Administration Building, AB 218
Phone: 919-866-5460.
Hours: 8:00 a.m. to 5:00 p.m. Monday – Thursday
8:00 a.m. to 4:00 p.m. Friday
Evenings by appointment

Students who wish to access occupational and career links may go to our website at http://counseling.waketech.edu/career.php

COOPERATIVE EDUCATION PROGRAM
Website: http://coopeducation.waketech.edu
Wake Technical Community College was the first college in North Carolina to offer its students the benefit of participation in Cooperative Education. Wake Tech students have enjoyed this extra benefit since 1966. Students who graduate from curricula that offer the cooperative education component begin their job search with several months of work experience in addition to their degree. In a highly competitive job market, an associate degree or a diploma plus actual work experience related to the chosen curriculum is highly desirable and gives the Wake Tech graduate an advantage over other job applicants.

Because of the intrinsic value of Cooperative Education for the student, Wake Tech requires participation in Cooperative Education in many of its technical and vocational curricula. The College reserves the right to implement, change, or discontinue the Cooperative Education component in any of its curricula.

To become eligible for Cooperative Education, students must meet the following criteria:
- Be enrolled in one of the A.A.S. degree, Diploma or Certificate programs approved for Cooperative Education credit.
- Be recommended in writing by the student’s faculty advisor.
- Satisfactorily complete the equivalent of one semester with 14 semester-hour credits at Wake Technical Community College of the major curriculum (unless otherwise specified by the program).
- Apply for participation with the Co-op office.
- Maintain a grade-point average of 2.0 or better. Students enrolled in the degree or diploma Early Childhood Associate curricula must maintain a 2.5 GPA. Students who have a low GPA or have not completed the required number of courses will not be accepted for Co-op. After improving his/her grade-point average and/or completing the required courses, a student may re-apply for Co-op.
- Attend seminars or scheduled meetings conducted by the Cooperative Education staff.
- Demonstrate satisfactory personal appearance, attitude, and the ability to work.
- Meet standard health requirements for any Co-op work experience.
- Be legally authorized to work in the United States. Students should be prepared to produce a social security card, a birth certificate, and/or a driver’s license.
- Certain academic programs may have additional specific requirements for eligibility.
- Meet employer requirements before starting work experience which may include background and credit checks, and drug testing.

Additionally, whether or not a student is eligible to be placed in a co-op work assignment will be determined by the Coordinator of Cooperative Education, based upon selected criteria such as the student’s prior work experience, academic performance, attitude, appearance, health, and position availability. Once the determination has been made that the student is eligible for a co-op assignment, it will be necessary for the student to satisfactorily complete all co-op orientation sessions, seminars, and assignments in order to graduate. After determination of co-op eligibility, the student will begin the process of interviewing with employers for a co-op work experience. Every effort is made to place all eligible students in a co-op work experience; however, job placement cannot be guaranteed.

The program is designed to be as flexible as possible to accommodate individual career plans. Students may choose from among several methods to conduct their work experience depending on employer’s needs. Those plans include part-time and full-time work assignments.

Cooperative education is required for graduation in many of the curricula that offer it as a component. In some cases,
cooperative education credit may be applied to satisfy electives or other requirements.

By its name, "Cooperative Education" is an activity involving the cooperation of Wake Technical Community College, Wake Tech students, and participating businesses and industries. Therefore, the program is managed through the utilization of certain guidelines and procedures to which all parties must subscribe. The benefits of cooperative education are numerous:

**Benefits to Student**
- Relates theory to practice
- Improves student academic motivation
- Develops and enhances interpersonal skills
- Acquires valuable job experience (usually means a higher starting salary)
- Provides professional experience prior to graduation and after-graduation employment opportunities
- Acquisition of Job Search Skills (resume preparation, interviewing skills, etc.)
- Earns an income (certain types of co-op do not include monetary earnings)

**Benefits to Employer**
- Ability to contact and screen prospective employees
- Cost effective method for long-term recruitment and retention
- Increases performance as a permanent employee
- Provides opportunities for employer input to College programs

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**ENGLISH AS A FOREIGN LANGUAGE (EFL)**

Website: http://efl.waketech.edu/

The English as a Foreign Language (EFL) department offers academic English courses for individuals whose native language is not English and who wish to study at the college and university level in the United States. These courses comprise an intensive English language program that focuses on language for academic purposes; courses are offered on four proficiency levels in grammar, composition, reading, and listening/speaking. See the course descriptions listed as EFL in the course descriptions sections of this catalog for specific course information. This program meets the requirements for those students who have a student visa. Prospective students who wish to obtain a student visa should go to the International Student website at http://efl.waketech.edu. Tuition rates are the same as those for other curriculum classes offered at Wake Tech. The EFL office is in the Technical Education Building, Room 109. Prospective students can call 866-5325 for more information.
INDIVIDUALIZED LEARNING CENTER (ILC)

Services are available at Main Campus, Health Science Campus, Northern Wake Campus, Western Wake Campus, and on-line for Distance Learning tutorials.

The Individualized Learning Center (ILC) offers study opportunities geared to an individual's personal needs or interests that include:
- One-on-one tutoring
- On-line support for distance learning students
- Computer-assisted instruction
- Videocassettes, programmed texts
- Instructor-directed workshops

ILC services are free, and any Wake Tech student or employee may use the center at his or her convenience. All users must complete a data form and use the timekeeping system.

The Skills Centers are designed to offer support services to curriculum students. Instructors can refer students to the Computer Center, the Math Center, the Study Skills Center, the Foreign Language Help Center, or the Writing Center for tutorial assistance.

The Computer Center offers assistance with word processing, keyboarding, Windows applications, programming, web designs, and other course-related software. Videos, tutorial books, and basic user guides are available for student use. The Computer Center offers workshops for Windows and word processing. Instructors can also request introductory tours.

The Math Center offers tutorial assistance for students taking traditional math classes, chemistry, physics, or any class with a math component. The Math Center also has computers, videos, slide, and cassette programs, books, and other supplementary materials for student use. Excel, TI-84 Plus, TI-86, and TI-89 calculator workshops are offered each semester.

The Study Skills Center offers one-on-one tutoring and a variety of workshops and videos which focus on three major areas: identifying individual learning styles, improving study skills, and improving reading skills. The center supports all curricula at Wake Tech.

The Foreign Language Help Center provides individual tutoring in Spanish and French, workshops, guided study groups, printed materials, sample student presentations and strategies to improve presentations.

The Writing Center stresses an across-the-curriculum philosophy. Tutorials are conducted on a one-on-one basis with the student's writing serving as the focal point of discussion. In addition, the Writing Center offers workshops on grammar, the writing process, documentation, and literary analysis; online help to students enrolled in distance education courses; and revision assistance to students writing at the computer. Walk-in appointments are available morning and early afternoon hours; appointments may be reserved for evenings and Saturdays.

The goal of the Basic Skills Center is to assist students in improving fundamental skills that lead toward mastery and achievement of its program goals. Ability to benefit from the program is a prerequisite for entering and continuing in the program.

The ABE/GED preparation program is designed to assist adults who want to learn reading, writing, math (Adult Basic Education), and/or who want to complete a high school equivalency (GED) diploma. Instruction is individualized and materials are self-paced. Students may enroll at any time. Those under age 19 must provide special paperwork and students must attend a placement test session.

Basic Skills/GED Program Hours:
Day: Monday – Friday 9 a.m. – 2 p.m.
Evening: Monday, Tuesday, Thursday 5:30 p.m. – 9 p.m.

Additional Services are available in the ILC. Please inquire ahead to receive information on how to take advantage of these services:
- Admission preparation for students desiring to prepare for the Wake Tech placement tests
- Basic algebra and chemistry to meet Wake Tech entrance requirements
- Basic mathematics, algebra, intermediate algebra, college algebra, and trigonometry videos

ILC campus locations and hours of operation:

<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIN</td>
<td>9101 Fayetteville Rd. ILC Bldg Room 112</td>
<td>Monday – Thursday 8 a.m. – 9 p.m., Friday 8 a.m. – 3 p.m., Saturday 9 a.m. – 1 p.m.</td>
</tr>
<tr>
<td>NORTHERN WAKE</td>
<td>6600 Louisburg Rd. Math and Science Bldg. Room 213</td>
<td>Monday-Thursday 9 a.m. - 5 p.m.</td>
</tr>
<tr>
<td>HEALTH SCIENCES</td>
<td>2901 Holston Lane HSA Suite 203</td>
<td>Tuesday-Thursday 12 p.m.- 6 p.m.</td>
</tr>
<tr>
<td>WESTERN WAKE</td>
<td>3434 Kildaire Farm Rd. Room 253</td>
<td>Tuesday 8 a.m.-2 p.m., Wednesday - Thursday 11 a.m.-4 p.m.</td>
</tr>
</tbody>
</table>

Hours may vary within each skills center. Please call ahead to check availability. ILC website: http://ilc.waketech.edu
JOB PLACEMENT
Website: http://jobplacement.waketech.edu
The Job Placement Office assists students in seeking full-time employment upon graduation, as well as finding part-time, temporary employment while they attend school. Job development within each curriculum is promoted at Wake Tech as an ongoing function. The services provided by the Job Placement Office are available to any curriculum student currently enrolled at Wake Tech and to all graduates within the last five years. The Job Placement Office coordinates all on-campus job/military recruiting. The College does not guarantee employment to any student or employees to any employer. There is no charge to industry or to students for job placement services.

LIBRARIES
Wake Technical Community College operates four libraries, as well as providing student resources through a library website at http://library.waketech.edu.

Combined resources for these libraries include over 75,000 books, 500 periodical subscriptions, 7,000 audio-visual items, and access to a variety of databases, including the state consortium NC Live. The use of library resources requires registration with the library: students must present a valid student ID card; Wake County residents must show a valid driver’s license. Reference materials, reserves, periodicals, and newspapers are restricted to library use only.

Both libraries have coin-operated copiers. Howell Library has seating for more than 300 people and offers group study rooms, a media center, and an assistive technology room equipped for various needs. Howell Library also has over 40 computers available for education and research purposes, as well as a classroom training area and a collection of maps and atlases, some available for checkout.

The Health Sciences Library has seating for over 100 people and includes 25 computers for educational and research purposes, including a lab for instructional activities. The library also has audio-visual viewing equipment for use with its video collection as well as a collection of anatomical models.

The library at the new Northern Wake Campus has 22 computers for patron access to the Internet and library research databases, as well as 3 computers for staff use at the upper and lower level service desks. We now have seating for more than 120 patrons, and our collections total more than 2,500 titles, including circulating and reference books. The library also has 5 group study rooms for student and faculty use, equipped with white boards and markers.

The Northern Wake Campus Library also offers tours and instructional classes on the use of library resources - both print materials and electronic databases, including searching demos and search strategies. The classes are tailored to fit the specific research and curricular needs of the students.

Librarians and staff are on duty to assist with reference or research needs and to answer general questions. If you need assistance or have questions about finding, accessing, or using resources, please see a library staff member.

The library website is a portal for information and resources, including the online catalog, access to NC Live and NC Knows (virtual reference), subject guides, and links to other useful resources in specific subject areas. Also available on the website are library statistics and hours of operation and information about reserve books, tutorials, and distance learning.

The libraries may be contacted at 866-5644 (Howell Library), 335-1029 (Western Wake), 532-5550 (Northern Wake), or 747-0002 (Health Sciences Library).

PHOTO ID
It is important that all curriculum students on the Main, Western Wake, Health Sciences, and North Campuses obtain and carry at all times their Wake Technical Community College Student ID. IDs will be required in order for students to use the Student Lounge, ILC, Library, and certain Continuing Education classes. Student IDs may be obtained on the Main 8:00 a.m. to 5:00 pm. Monday through Thursday, 8:00 a.m. to 4:00 p.m. on Fridays, North Campus, Western Wake Campus and Health Science Campuses, between 8:00 a.m. and 5:00 p.m., Monday through Friday. The initial Student ID will be free; a duplicate ID can be obtained for $5.00.

STUDENT GOVERNMENT ASSOCIATION
The Student Government Association (SGA) is the campus organization that represents the interests of all Wake Tech students. Each curriculum student enrolled at Wake Technical Community College is required to pay the Student Administration Fee and shall be a member of the Wake Technical Community College Student Government Association and governed by its rules and regulations.

STUDENT HANDBOOK
All regulations and policies pertaining to student conduct are listed in the student handbook. A planner is included to assist student with their academic calendar. The handbook may be viewed online (http://handbook.waketech.edu/) and copies are available in the Student Services office on each campus. Students are responsible for reading the information in the student handbook.

One condition of enrollment at the College is that the student follows the Student Code of Conduct.

STUDENT PUBLICATIONS
Wake Technical Community College sponsors a newspaper, titled The Student Voice, which is written, edited, and managed by students with the assistance of an advisor from the . Art, Humanities, and Social Sciences Division.
PUBLICATIONS POLICY
Publications are defined to include but are not limited to the following: newspapers, pamphlets, newsletters, brochures, flyers, books, posters, or magazines. Publications are not to be printed or distributed without official approval of the Dean of Students. Off-campus organizations are not allowed to distribute their publications on any of the College’s properties without the approval of the Dean of Students.

Approved campus organizations may post and distribute their publications if said publications have been approved by the president of the organization, the organization’s advisor, and the Dean of Students.

Publications containing profanity, language that is offensive to race, sex, or creed, grammatically incorrect statements, and misspelled words will not be approved for printing or distribution. All publications must represent the dignity, mission, and standards of the College.

Organizational publications must also be consistent with the philosophy and mission of the organization.

The College reserves the right to rescind approval for on-campus activity for any organization that violates this policy. Individuals found guilty of not conforming to this Publications Policy could face disciplinary action, including suspension from the College.

From time to time, changes made to published College policies will affect students. The College reserves the right to make such changes and holds students responsible for keeping themselves informed about changing information. Announcements of changes will be published in official publications of the College.

WAKE TECH ALUMNI ASSOCIATION
The College encourages its alumni to share information about personal and professional accomplishments through a link on the College website. Inquiries about alumni news should be directed to the College’s Foundation Office. An online alumni magazine is in development.

Student Chapters of Professional Organizations & Clubs
The Office of Student Development supports and encourages professional organizations and clubs at Wake Technical Community College. Professional organizations and clubs give students a unique opportunity to develop leadership skills, network with professionals in a given field of study, and to get involved. For a list of clubs and organizations, please visit Students interested in joining a club should go by the Office of Student Development, located in the Student Services Building. Website: http://studentactivities.waketech.edu/clubs.php

GUIDELINES FOR ORGANIZATION APPROVAL
All student organizations must be approved by the College through the Office of Student Development. The following steps are the procedural guidelines in obtaining new student organization approval:

- Students desiring the creation of a new organization must present their request to the Student Activities Coordinator. This presentation must include the name of the organization, the purpose, the objectives, recommendations for faculty advisor, the procedure for election of club officers, the means for the financing, the method of financing, and other related information desired by the Dean of Students’ office.

- The organization must receive approval from the Coordinator of Student Activities, the Dean of Students, the Vice President of Student Services, and the President of the College before becoming an official college organization. Disapprovals can be appealed using the grievance procedure contained in this publication.

Disability Services
The mission of Disability Support Services (DSS) is to adapt the College’s general services to the specialized, individual needs of otherwise qualified students with disabilities, for the purpose of providing equal access to all programs, facilities, and activities.

Students requesting disability accommodations from the College must self-identify to Disability Support Services. Students are required to submit current documentation of their disability to DSS to determine eligibility prior to the implementation of services. Students requesting accommodations from the College must have a disability as defined by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act. Self-identification and providing documentation can be initiated at any time; however, the student must allow reasonable time for accommodations to be implemented.
Consistent with the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973, Wake Technical Community College is committed to equality of educational opportunity and ensures that no qualified person shall be denied access to, participation in, or the benefits of any program or activity operated by the College. Each qualified person with a disability shall receive necessary reasonable accommodations to ensure equal access to educational opportunities, programs, and activities in the most integrated setting appropriate.

To obtain additional information or to read documentation guidelines and/or DSS Policies and Procedures, please go to the DSS website http://disabilityservices.waketech.edu or contact the DSS office at (919) 866-5670 (TTY 779-0668).

Distance Education

Wake Technical Community College offers students three options for distance education instruction: Internet courses, hybrid courses, and telecourses. These alternatives to traditional seated classes allow students to take courses at times convenient to their schedules. Each course is facilitated by a qualified, competent instructor who develops the course so that the learning outcomes are comparable to a traditional seated class, who serves as a resource to the students, and who provides a syllabus and course guidelines. Costs and credits earned are the same as on-campus courses, and students have access to equivalent services and resources. Students interested in taking a distance education course should go to the College’s website, http://DistanceEd.waketech.edu

INTERNET COURSES

Students registered for Internet courses may be offered the opportunity to attend an orientation or other meeting at the College, but generally the subject matter is presented online and distributed through the College's Blackboard server, http://dist-ed.waketech.edu. Students must have an e-mail account and access to a personal computer with Internet connection and browser software. Wake Tech faculty develop and teach online courses.

Before enrolling in an Internet course, students should:
1. Preview the Internet course, http://DistanceEd.waketech.edu/preview.htm
2. Participate in the online student orientation, http://DistanceEd.waketech.edu/orientation.html
3. Take the self-assessment entitled “Are You Prepared for an Online Course?”; and
4. Review the frequently-asked questions on the distance education website, http://DistanceEd.waketech.edu

HYBRID COURSES

Hybrid courses combine regular classroom meetings with Internet instruction, reducing the number of hours a class meets on campus during the semester. The instructor determines the class schedule, which is published online. Students must have an e-mail account and access to a personal computer with Internet connection and browser software.

Before enrolling in a hybrid course, students should:
1. Preview the hybrid course, http://DistanceEd.waketech.edu/preview.htm; and
2. Review the online student information posted on the distance education website, http://DistanceEd.waketech.edu/.

TELECOURSES

Instruction for telecourses is offered via videocassettes, which students view at a time and location of their choosing; they are, however, required to attend a certain number of on-campus meetings as indicated by the instructor, including an orientation. In addition, exams are taken in the Distance Education Testing Center on the main campus during a time period specified by the instructor. Telecourse videos are obtained from commercial producers.

At the beginning of each semester, students are loaned a complete set of telecourse tapes and are required to sign an agreement indicating their understanding of the charges for tapes that are not returned at the end of the semester. Students are charged a fee of $5 per tape for any missing tapes ($65 for the entire set) and registration will be blocked until either the tapes are returned to the College or the fine is paid in full.

Before enrolling in a telecourse, students should:
1. Read the telecourse information at http://DistanceEd.waketech.edu/tele/info.html
2. Take the self-assessment entitled “Are You Prepared for a Telecourse?”; and
3. Review the frequently-asked questions on the distance education website, http://DistanceEd.waketech.edu.

TESTING CENTER

Telecourse and online instructors may require students to take tests on the main campus. The Distance Education Testing Center is located in Room 15 of the Library Education Building. Hours are posted online at http://DistanceEd.waketech.edu/testcnt.html or students may call (919) 866-5615.

LIBRARY RESOURCES

To maintain a sound-learning environment, students enrolled in distance education courses have access to the Howell Library on the main campus and the Health Sciences Library on Sunnybrook Road near Wake Medical Center. Although traditional library services are available to all students, the College has expanded its services to accommodate distance learning. The library's website, http://library.waketech.edu is available to on-campus, off-campus, and distance education students. The website provides information on interlibrary loans, loan periods, hours of operation, and electronic and print databases. The website has links that provide access to other libraries, resources, search engines, and services such as NC LIVE.
General Information

CAMPUS SECURITY & SAFETY

Website: http://facilities.waketech.edu/security/
The Board of Trustees of Wake Technical Community College has adopted policy statements in compliance with the dictates of the Jeanne Cleary Disclosure of Campus Security Policy and Campus Crime Statistics Act (Clery Act).

The College’s Director of Security Services is primarily responsible for developing rules and regulations to implement these policies. Crimes on the main campus are reported to the Wake County Sheriff’s Department (or other appropriate law enforcement agency), which investigates on-campus murder, criminal sexual assault, criminal sexual abuse, robbery, aggravated assault, aggravated battery, burglary, motor vehicle theft, liquor law violations, drug abuse violations, weapons possession, and other emergencies on campus considered to be a threat to safety. Crimes on the Adult Education campus, the Health Sciences campus, Northern Wake campus and Public Safety Training Center are reported to the Raleigh Police Department. Crimes on the Western Wake campus are reported to Cary Police Department. Crimes on the Plastics Technology campus are reported to the Zebulon Police Department. Timely reports of such occurrences are made to employees and students. In the event the perpetrator of a violent crime is subject to discipline by the College, the victim of the crime shall, at the discretion of the College’s administration, be permitted to obtain results of the disciplinary proceeding.

The College’s Security Services Division prepares, publishes, and distributes statistical reports that identify the occurrence of campus crimes and the number of campus arrests involving liquor law violations, drug abuse violations, and weapons violations. The policy statements and statistical reports are available upon request to students and employees as well as prospective students and the higher education community at Holding Hall, room 101A, Main Campus, 9101 Fayetteville road, Raleigh, NC 27603.

Security patrol and traffic control matters are handled by a private security company under contract with the College. This company is responsible to the College’s Director of Security Services, whose office is on Main Campus, in Holding Hall, room 101A and whose telephone number is 866-5532. The Director of Security Services also can be contacted by dialing the College’s main switchboard number, 866-5000 (from off-campus or from a coin telephone). Students, employees, and visitors are encouraged to report criminal activity and other emergencies on any campus at the College’s emergency number, 866-5911.

Students and employees are prohibited from bringing onto campus or using alcohol or illegal drugs on campus or during any College activity. Limited exceptions to this policy may be granted by the College’s President or designee. The College has a Drug and Substance Abuse Council, which offers help to students and employees in seeking counseling and/or assistance programs. From time to time workshops and seminars are conducted on campus relating to the following subjects:

- Crime and Safety
- Drugs and Alcohol
- Self-Defense
- Date Rape

Other information is periodically published in the Campus Connections at http://connections.waketech.edu/ and the student newsletter, The Eagle’s Eye. The student newspaper, The Student Voice discusses and debates health, safety, self-defense, etc., issues.

Campus safety means protecting people and property. People working together can make our campuses safe and secure working and learning environments. Report suspicious persons, vehicles, and activities to the Security Patrol Officer or the Director of Security Services at 866-5911. Students attending classes in the evenings should walk in well-lighted areas with someone or near other people. Extra precaution should be taken by using sidewalks and crosswalks and by avoiding isolated areas. Personal valuables should be marked and NOT left unattended. Vehicles should be parked in a well-lighted area and locked.

Presentations by Local Law Enforcement Personnel

Presentations are conducted by the Wake County Sheriff’s Department, Raleigh Police Department, SBI, and the N.C. Highway Patrol concerning robbery, motor vehicle theft, and drugs and alcohol.

Annual Report of Criminal Offenses

The Clery Act, requires publication of criminal activity in the following categories. The figures shown in the tables below encompass all campuses of Wake Technical Community College.

**MAIN CAMPUS**

<table>
<thead>
<tr>
<th>Category</th>
<th>Calendar Year 2007</th>
<th>Calendar Year 2006</th>
<th>Calendar Year 2005</th>
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</thead>
<tbody>
<tr>
<td>Murder</td>
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<tr>
<td>Sexual Offenses</td>
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<tr>
<td>Robbery</td>
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<tr>
<td>Aggravated</td>
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<tr>
<td>Assault</td>
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<tr>
<td>Burglary</td>
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<tr>
<td>Motor Vehicle</td>
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<tr>
<td>Theft</td>
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<tr>
<td>Manslaughter</td>
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<td>Arson</td>
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<td>Crime</td>
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The following are statistics regarding arrests on campus in the listed categories:

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<tr>
<td>Liquor Law Violations</td>
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<tr>
<td>Drug Abuse Violations</td>
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<tr>
<td>Weapon Possessions</td>
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### HEALTH SCIENCES

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<tr>
<td>Weapon Possessions</td>
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### HOUSING

The College does not have housing facilities, but students should have no difficulty in locating satisfactory housing.

### INCLEMENT WEATHER SCHEDULE

Information regarding the closing of the College because of inclement weather will be announced on local radio and television stations and is posted on Wake Tech’s website. In the event that bad weather occurs after the opening of the College, announcement of the dismissal of classes will come from the administrative officer in charge at that time.

#### When Inclement Weather Hits:
- If the College is closed, all classes at all sites are cancelled.
- If evening classes are cancelled, all classes at all sites are cancelled.
- If the College is open but Wake County Public Schools (WCPSS) are closed, Wake Tech classes scheduled at Wake County Public School sites are cancelled.
- Wake Tech classes scheduled at the following sites will be held even when classes at WCPSS sites are cancelled:
  - Main Campus
  - Health Sciences Campus
  - Adult Education Center

### DRUG ABUSE PREVENTION PROGRAM

The College has materials relating to drug abuse prevention available to all students, faculty, and staff. Interested individuals are encouraged to make use of the materials, which are located in the libraries on the Main, Health Sciences, Western Wake, and Northern Wake campuses.

### INTERNET USAGE POLICY

**At Wake Technical Community College, Information Technology Services has provided equipment and access for students, faculty, and staff to connect to the Internet. The College wants the Internet to be an effective resource that adheres to the mission of the College. Users of Wake Tech’s computer services are expected to abide by the following policies, which are intended to preserve the utility of the system, to protect the privacy and work of students, faculty, and staff, and to preserve the right to access the international networks to which the College systems are connected.**

#### General Usage Policy

1. Faculty, staff, and students with permission from College officials may use the College’s computing facilities for scholarly purposes and official College business so long as such use does not violate any laws or College policy and does not result in commercial gain or private profit.
2. The College prohibits accessing internet services that do not further educational interests. This specifically includes but is not limited to subjects pertaining to pornography. Accessing or distributing pornographic materials is a violation of this policy that will result in disciplinary action, up to and including termination or expulsion.
3. Use of electronic mail and other network communications facilities to harass, offend, or invade the privacy of other users of the network is prohibited.
4. Besides providing access to the internet, the College has its own website. The Information Technology Services department will maintain the website. It will be the only official website representing the College.
5. Students are not permitted to use the College’s name or any association with the College in websites they create. Faculty and staff members are not permitted to use the College’s name or any association with the College in websites they create that reflect negatively on the College or violate any of the policies contained herein.
6. Violation of any of the above provisions will result in disciplinary action, up to and including termination or expulsion.

You can determine if your classes are cancelled by:
- Checking the Wake Tech website www.waketech.edu
- Calling the college switchboard at (919) 866-5000, or
- Checking local media stations (radio or television) for the latest information.

To report a problem in a computer lab, please go to http://helpdesk.waketech.edu and enter a service request, or call 866-7000 to speak to someone at the Wake Tech
Help Desk. If you are on campus, you can reach the Help Desk by dialing extension 6-7000.

**LOST AND FOUND**
Wake Tech’s “Lost and Found” repository is located in the Student Services Building, Room 121F.

**SOLICITATION**
Solicitations occur in numerous forms, formats, and techniques. For the purposes of this handbook, “solicitations” are deemed to include, among other activities, attempts to address all or portions of the College community to express social, political, or religious views; to disseminate written materials; or to request, accept, or collect donations or contributions. The general policy of the College is that any individual, organization, agency, or group that desires to solicit on any property which is owned, leased, or operated under the jurisdiction of the College is required to obtain the prior approval of the Office of the College President in writing. Specific policies are stated below:

A. **Distribution of Written Materials**
Pamphlets, publications, advertisements, and any other such materials may not be distributed through any form of the College’s internal mail system. Such materials may, however, be distributed by hand at such time(s) and at such location(s) as may be designated in writing by the College President, upon written application submitted in accordance with paragraph E below.

Any individual, organization, agency, or group that distributes written materials on any property which is owned, leased, or operated under the jurisdiction of the College shall reimburse the College for any of the College’s internal or external clean-up costs associated with the distribution of such materials.

B. **Posting of Messages or Materials**
It is expressely prohibited for any individual, agency, organization, or group not officially affiliated with the College to use any surface such as walls, bulletin boards, trees, or the like located on any property owned, leased, or operated under the jurisdiction of the College to display any written or otherwise visual materials.

C. **Commercial Use of Bulletin Boards**
The College provides some bulletin board space for its students and employees to advertise or request goods and services. Other than such limited use by the College’s students and employees, bulletin boards located on any property that is owned, leased, or operated under the jurisdiction of the College may not be used for commercial purposes.

D. **Donations and Contributions**
Only individuals, organizations, and groups that have registered with the Department of the Secretary of State under Chapter 131F of the General Statutes of North Carolina or individuals, organizations, and groups that are exempt from these registration requirements, may solicit, accept, or collect donations or contributions for any purpose on any property which is owned, leased, or operated under the jurisdiction of the College. Prior to engaging in any such activities, individuals, organizations, and groups who desire to solicit, accept, or collect donations or contributions shall request permission in writing from the Office of the College President in the manner provided in paragraph E below for “Other Solicitations.” If made in compliance with this policy, such requests to solicit shall be allowed, although the solicitations will be subject to the same conditions, limitations and restrictions as provided in paragraph E below for “Other Solicitations.”

E. **Other Solicitations**
Goods and Services – Students who desire to solicit on any property that is owned, leased, or operated under the jurisdiction of the College to provide goods or services should make their request in writing to the Dean of Students. The request must contain a full description of the activity as to time, benefit, etc., in order to be considered. The decision as to whether such request should be allowed or denied and any conditions attached thereto shall be within the Dean’s discretion. The Dean shall respond to all such requests in writing within five (5) working days from the date the request is received. All other individuals, organizations, agencies, or causes are prohibited from canvassing, selling, offering for sale, soliciting, or promoting the sale or advancement of any goods or services on any property which is owned, leased, or operated under the jurisdiction of the College.

Other Solicitations – No individual, agency, organization, or group that desires to solicit on any property which is owned, leased, or operated under the jurisdiction of the College may engage in any such solicitation without first making a request in writing to the Office of the College President and then receiving written permission from the President or the President’s designee. The request must contain a full description of the activity, material to be distributed, benefit, dates and time, etc., in order to be considered. The College President or the President’s designee will mail a response to the request within five (5) working days from the date the request is received. If made in compliance with this policy, such requests to solicit shall be allowed, although the solicitations will be restricted by the President or the President’s designee to a designated area on campus, and be limited to a maximum of two (2) hours per day, one (1) day per week on such days and at such times as are designated by the President or the President’s designee. No sound amplification devices shall be permitted. The President or the President’s designee may require that the party soliciting cease the solicitation and leave the property if the party soliciting uses language or techniques that would be considered offensive to persons of ordinary sensitivities or would have a tendency to incite a breach of the peace, if the party soliciting is overly loud or otherwise disruptive to classes or the normal administration or operation of the College, or if the party soliciting otherwise fails to comply with the College’s solicitation policy. Gross, multiple, or continued violation of this solicitation policy may additionally result in the soliciting party’s loss or suspension of future solicitation...
privileges on property which is owned, leased, or operated under the jurisdiction of the College.

TRANSPORTATION
Wake Technical Community College provides bus service for students between downtown Raleigh and the Main Campus. The bus stop on Main Campus is located in front of the Pucher Lemay Building. A schedule can be obtained in Holding Hall, Student Services, or the Individualized Learning Center.

Campus Use Policies
Students have a right to use all resources and facilities of the College during normal operating hours with the proper authorization. Students may not utilize resources and facilities of the College after hours without prior official approval and without faculty supervision. The security personnel must be notified under these unusual circumstances.

CELL PHONES
Students may not engage in any activity that is disruptive to orderly classroom instruction, without limitations to the use of cell phone or pager calls; students are therefore required to disengage all such devices when in a classroom.

CLEANLINESS AND PROPER DRESS
Personal cleanliness is an expectation in the College environment. This expectation implies appropriate use of the disposal containers in the halls and in all areas of shops, classrooms, lounges, and cafeteria. Littering is not allowed.

Students are expected to dress appropriate to their major area of study. Students are not allowed in any campus facility without shoes and shirts. Caps and hats should not be worn in any classroom.

In the areas of study that require special clothing, students will attire themselves accordingly. Safety equipment such as goggles, shields, helmets, etc., is available and in some instances, required for student participation in shop and laboratory activities.

In cases where a student’s dress or hygiene interferes with the learning process, the instructor shall conduct initial counseling with student. Repeated occurrences will result in referral to the Dean of Students Office or designee.

EMERGENCY EXIT PROCEDURES
If the need should arise to evacuate a building because of fire or other impending danger, a general alarm will be sounded. When such an alarm is sounded, individuals should leave the building by way of the nearest exit. Individuals should become familiar with posted evacuation routes.

FOOD AND BEVERAGES
Food and beverages are not permitted in classrooms, laboratories, shops, learning centers, libraries, or in any instructional area. This policy applies at all Wake Tech campuses, community school locations, and other facilities.

HEALTH AND SAFETY
Insurance and Accidents
The College cannot assume responsibility for injuries or losses sustained on or off campus by any student. Accident insurance is included in the Student Administration fee for all curriculum students.

All students covered by the insurance policy are responsible for reading the Student Accident Insurance Brochure (Policy) and following the claim procedures. After the accident has been reported and logged with campus security, the student may present a copy of any itemized medical bills to the Office of the Registrar, to receive an Accident Insurance Claim form. The Office of the Registrar will not release an Accident Insurance Claim form until receipt of the accident report from campus security. The accident claim must be filed within 90 days of treatment for any injury.

The College requires each person enrolling in a Health Sciences curriculum to have student malpractice liability insurance coverage in the amount of $2,000,000/ $5,000,000. This professional liability insurance may be purchased from most local insurance agencies or through a blanket liability insurance program at the College. Proof of coverage must be presented at the time of registration by providing the policy or certification of insurance. In the absence of proof of coverage, students enrolled in a Health Sciences curriculum are required to purchase professional liability insurance through the College’s blanket liability insurance program at the time of registration. Students participating in sports activities are required to have accident insurance. Additional personal injury insurance may be required for the athletics program.

Health and Safety Program Responsibility
The responsibility for the organization, supervision, personnel training, and evaluation of an institutional program of health and safety has been assigned to the Facilities Engineer or a designee.

Notification of Accidents
Notification procedures for all accidents involving students and visitors are as follows:
- Students and visitors should notify campus security at 866-5911 of all accidents that occur on any Wake Technical Community College campus facility.
- Campus security will complete an incident report for all accidents and forward documentation to the appropriate service areas for accident insurance, facility maintenance, etc.

Administering of First Aid
From time to time students, employees, or visitors could be injured during the course of regular College activities. In the event of minor scratches and abrasions, first aid may
be administered by College employees who are responsible for areas in which first aid kits are located. Only the supplies in the kits should be used, and in no circumstances should any medication be provided for oral consumption. Security Officers on any campus will assist and administer first aid and can be contacted at the College emergency number, 866-5911.

In the case of more severe injuries, employees on the scene should call 911 and then contact campus security at 866-5911. Security will assist the injured party and arrange for the arrival of emergency medical personnel. Security will fill out an incident report and forward to the Director of Security Services for appropriate action.

The decision to call Emergency Medical Services or other medical personnel rests with the Director of Security Services or his/her designee and the injured party. The College will make appropriate efforts to secure transportation for the sick or injured student, employee, or visitor. The College will not transport nor assume responsibility for the transport of other sick or injured persons.

MEDIA COVERAGE OF COLLEGE ACTIVITIES
As a public, tax-supported community college, Wake Technical Community College complies with public information law and works with news media to provide coverage of news about the College. Occasionally, media representatives may visit College classrooms to interview and photograph students. The College welcomes these opportunities and respects the rights of students who may not wish to be interviewed or photographed. Students may be excused from classroom activities, without question, while photographs or video images are recorded.

OFF-CAMPUS SITES
Many credit and non-credit courses are scheduled at community schools and other locations county-wide. All rules and regulations of Wake Technical Community College apply at off-campus sites in addition to any rules and regulations specified by those sites.

PETS
Pets, including but not limited to dogs and cats, create several conditions the College is not equipped to handle. Pets may carry and spread parasites. Pets of any type may not be brought on campus. This policy is in no way intended to restrict access to the campus for animals specifically trained to aid individuals with disabilities.

SKATE BOARDING/ROLLER BLADING
Skate boarding and roller blading are not allowed on any Wake Technical Community College campus or site.

SMOKING
Effective August 2008 all Wake Technical Community College buildings, grounds and parking lots are “Tobacco Free.” Smoking at community school locations is prohibited by the Wake County Public School System. This includes buildings, school grounds, and parking lots.

STUDENT CENTERS
The Student Center on the Main Campus is located in the Student Services Building, Room 121. The Student Center houses TV areas, Lost and Found, and the Student Photo ID Office (SS121F). The Student Center on the Health Sciences Campus is located in the Health Education Building. The Student Photo ID Office is located in the Student Services Building at the Health Sciences Campus. The Student Center on the North Campus is located in the Math and Science Building and the Photo ID Office is located in the Administration Building. The operational policies are posted on the bulletin boards at all centers.

STUDENT LOUNGE
The purpose of the Student Lounge is to allow students to meet with individuals or in small groups, relax between classes, play chess or checkers, and participate in educational activities, workshops, and other student-related events. Therefore, with these purposes in mind, the following guidelines must be observed in the Student Lounge:

- No loud noises (voices or electronic devices). If using electronic devices, earphones must be used.
- No musical instruments unless authorized.
- No profanity.
- Dining is not allowed in the Student Lounge on Main Campus. All foods and drinks should remain in the cafeteria. Please refer to Lounge Guidelines for all other campuses.
- It is each person’s responsibility to keep the lounge area presentable. Furniture is not to be moved or abused in any manner. Trash is to be placed in receptacles.
- Failure to comply with these guidelines will result in the loss of Student Lounge privileges for one week. A second offense will result in loss of privileges for one semester.
- Card playing is not permitted inside any building of the College except the Student Lounge.

Shirts and shoes must be worn at all times.

TELEPHONE CALLS
Public telephones are conveniently located on all campuses for students desiring to make telephone calls. A courtesy phone for student use is located in the Student Development Office Student Services Building 121G. Students are not permitted to use any other office telephones for personal calls. Since the College does not have access to an intercom system or a messenger service, staff members will not deliver a message to a student unless it is determined to be an emergency. In an emergency, an individual who calls for a student must state the nature of the emergency; someone in Student Services will look up the student’s schedule and attempt to contact him/his/her immediately.
STUDENT SERVICES / STUDENT LIFE

Contact the Evening Dean’s office for emergencies involving students attending evening classes.

VISITORS AND CHILDREN ON CAMPUS
Website: http://visitors.waketech.edu
Visitors are always welcome on the Wake Tech campus. Visitors should register at the receptionist desk in Holding Hall so that information and directions can be given to make the visit a beneficial one. The College does not encourage non-official visits. Individuals who are loitering or who have not registered at the receptionist desk will be asked to leave the campus.

Under no circumstances will visitors be allowed in classrooms, laboratories, or off-campus sites without appropriate approval.

Children and any other persons not registered for a class are not allowed in laboratories or classrooms at any site unless authorized by the appropriate vice president. Children must not be left unattended in any area of the College. At community school sites, only persons attending college or school activities are permitted on the premises. Students who violate these regulations at any of Wake Tech’s class locations will be subject to having their enrollment terminated.

Traffic Rules and Regulations

Ordinance Governing Traffic, Parking, and Registration of Motor Vehicles
Revised June 2006
http://facilities.waketech.edu/parkingtraffic.php

Be it resolved that, pursuant to the authority vested in it by Chapter 115D-21 of the General Statutes of North Carolina, the Board of Trustees of Wake Technical Community College adopts and records in its proceedings the following rules governing parking, traffic, and registration of motor vehicles on the campuses of Wake Technical Community College. These regulations are intended only to supplement the Motor Vehicle Laws of North Carolina, all provisions of which, under the terms of the above statute, now apply to the campuses of Wake Technical Community College. From the date of filing of these regulations in the Office of the Secretary of State, they shall apply to and be in effect on the streets, roads, alleys, sidewalks, walkways, parking spaces, parking areas, and parking lots on all parts of the campuses of Wake Technical Community College.

A. ARTICLE I. GENERAL PROVISIONS

Section 1. Definitions
1. “Abandoned vehicle” means a motor vehicle that has remained parked for a period of more than ten (10) days or which is determined to be “derelict” under North Carolina General Statute 20-137.7.
2. “Employee” means the faculty, administrative staff, clerical personnel, and all other non-student personnel of the College employed part-time or full-time as permanent or temporary employees.
3. “No parking area” means any area not specifically marked, striped, or designated for parking.
4. “Parking area” means any place or area specifically set aside, marked, or assigned by Facility Services for the parking of vehicles, either permanently or temporarily.
5. “Repeat offender” means any person committing three (3) or more traffic and/or parking violations within the academic year.
6. “Student” means a person registered for full- or part-time academic study and who is not also an employee of the College.
7. “Visitor” means any individual not identified by this section as an employee or student.

Section 2. Authority
1. As approved by North Carolina General Statutes, Chapter 115D-21, the Board of Trustees of Wake Technical Community College through their designee, Facility Services, shall be responsible for the registration, flow, and parking of vehicles on property owned or leased in whole or in part by the State of North Carolina and that is under control of the Board of Trustees of Wake Technical Community College. Notwithstanding the above, the Registrar shall be responsible for the registration of student vehicles. The provisions of the regulations shall apply to the operators of all vehicles that are operated on any of the College’s campuses, and they shall be in force and effect twenty-four hours a day, except as herein provided.
2. The Facilities Services Office, acting pursuant to the authority vested by this Ordinance and the Board of Trustees, shall exercise discretion and authority in such a manner as to insure the proper conduct of the necessary business of the College and shall exercise discretion and authority over the effective utilization and control of the available parking areas and facilities on the campuses of the College for the benefit and maximum convenience of students, faculty, staff, and visitors.
3. Liability. Wake Technical Community College assumes no liability or responsibility for damage to or theft of personal property or of any vehicle parked or in operation on the properties leased by or under the control of the Board of Trustees of the College.

Section 3. Violation of Ordinance
1. In addition to the criminal penalties set out by the North Carolina General Statutes, any person violating this or any regulation issued hereunder is...
subject to a civil penalty as set forth in this Ordinance.

2. **Rules of Evidence.** When a vehicle is found to be in violation of this Ordinance, it shall be considered prima facie evidence that the vehicle was parked:
   a) by the person holding the College parking permit for that vehicle, or
   b) by the person on file as owner of said vehicle with the North Carolina Division of Motor Vehicles or corresponding agency of another state.

B. **ARTICLE II. VEHICLE REGISTRATION AND PARKING PERMITS**

**Section 1. Permit Eligibility**
1. **General Provision.** All faculty, staff, and students in good standing with the College are eligible for and may obtain a parking permit. Each motor vehicle parked on the campus by students, faculty, and staff must be registered with the College and must display a valid, official vehicle parking permit issued by the College.

2. **Handicapped Parking Permit.** All faculty, staff, and students in good standing with the College who possess a valid “handicapped placard” or “distinguishing license plate” issued to them pursuant to North Carolina General Statute 20-37.5 are eligible for and may obtain a distinguishable Handicapped Parking Permit. The following requirements must be met to obtain a Handicapped Parking Permit:
   a) Complete a Wake Technical Community College VEHICLE REGISTRATION card.
   b) Present a registration card for the handicapped parking placard or distinguishing license plate issued to them pursuant to North Carolina General Statute 20-37.5.

3. **Parking permits** become invalid under the following conditions:
   a) Ownership of the vehicle is transferred to another person or entity.
   b) The permittee’s association with the College terminates.
   c) The time period for which the permit is issued expires.
   d) The permittee is issued another permit relating to the same vehicle.
   e) The permittee’s privilege to park and operate a vehicle is forfeited as a result of the imposition of disciplinary sanctions.
   f) The permittee has established a pattern of abuse of parking privileges by committing three (3) or more traffic or parking violations per academic year.

**Section 2. Registration of Motor Vehicles.**
1. **Faculty/Staff.** Registration of employee vehicles is conducted through the Personnel Records Office. There is no cost for vehicles operated by employees and no limit on the number of vehicles that can be registered. It should be noted that faculty/staff parking permits are for the exclusive use of faculty/staff only. This does not entitle relatives of faculty/staff to park in staff spaces, even if the vehicle has a staff/faculty parking permit. Staff/faculty parking permits need not be renewed except when the permit is worn or illegible.

2. **Students.** Registration of student vehicles will be conducted as a part of the normal College registration process. A vehicle brought onto the campus after college registration must be registered promptly.

3. Parking permits will be issued in conjunction with student identification badges and will be valid for one (1) academic year beginning August 1 and expiring July 31.

4. The vehicle parking permit shall be properly affixed to and displayed on the motor vehicle for which it is issued. Permits issued for four-wheel vehicles are to be placed on the left side of the rear window of such vehicle. Permits issued for two-wheel vehicles are to be placed on the rear of the vehicle.

5. Faculty, staff, and students issued a motor vehicle registration permit shall be responsible for parking violations involving the vehicle for which the permit is issued.

6. Students registered for classes at the Health Sciences Campus must obtain an entry key card for the parking deck. Temporary parking permits must be obtained whenever a permittee’s vehicle is unavailable and the permittee seeks to park or drive another vehicle on campus.

7. **Visitors.** Visitors to the campus, as defined in Article I, are not required to obtain a parking permit, but may park only in those parking spaces designated for visitor and/or general parking.

C. **ARTICLE III. PARKING AND TRAFFIC RULES AND REGULATIONS**

**Section 1. General Provision**
Faculty, staff, and students are subject to discipline in accordance with the provisions of this Ordinance and College policy and procedure.

**Section 2. Rules and Regulations**
1. No vehicle shall be driven in a careless or reckless manner or in a direction opposite to that
indicated by appropriate signs or markings on roadways that are designated as one-way streets.

2. For purpose of determining the speed limit on the campus, the campuses shall be deemed a business district, and the speed limit shall be 20 miles per hour.

3. Vehicles parking in non-parallel parking spaces shall be parked with the front end of the vehicle at the angle to the curb indicated by marking or signs, and no vehicle shall be parked in such a manner as to occupy more than one space. All vehicles must park in the direction of the flow of the traffic pattern.

4. Vehicles parking in a designated handicapped parking space must display a distinguishable handicapped parking permit issued by the college or, a valid handicapped placard or distinguishable license plate issued to the operator or passenger pursuant to North Carolina General Statute 20-37.5. Any person parking in a designated handicapped space must comply with the requirements of North Carolina General Statute 20-37.6 “Parking privileges for handicapped drivers and passengers”.

5. Parking in the following places is prohibited: on a sidewalk or walkway; along the main driveway entering the College; in the driving lanes of parking areas; in loading or unloading areas; in fire lanes; on the grass or landscaped areas; in the approaches or other portions of parking areas that are not clearly marked for parking.

6. Neither faculty, staff, nor student vehicles may use those parking spaces specifically reserved for certain persons or functions.

7. Agents designated by the Administration shall have authority to remove to a place of storage at the owner’s expense any vehicle illegally stopped, parked, or abandoned.

Section 3. Enforcement

1. The College shall reserve the right to revoke any parking privileges and to remove a repeat offender’s valid parking permit for flagrant violation of the Traffic Rules and Regulations, including failure to pay fines.

2. Fines. The Accounting Office is hereby authorized to collect a $5 fine for any of the following violations:
   
a) Back-in parking in parking space
   
b) Driving in a hazardous manner
   
c) Driving wrong way in drive lanes
   
d) Failure to display current parking decal
   
e) Failure to register vehicle
   
f) Failure to heed stop or yield sign
   
g) Improper display of parking decal
   
h) Parking in manner creating a hazard
   
i) Parking in more than one parking space
   
j) Parking in non-parking space
   
k) Parking in unauthorized space
   
l) Parking incorrectly in space

3. Towing. The Manager of Security is hereby authorized to have towed (or use other lawful means of enforcement), from the campuses of the College to a designated place of storage, any vehicle in violation of the following and under the following circumstances:
   
a) unauthorized parking in a handicapped space
   
b) unauthorized parking in reserved space
   
c) parking in area not designated for parking
   
d) repeated violation of the parking rules
   
e) abandoned vehicles

4. In addition to any fine assessed for a violation of this Ordinance, the owner of a vehicle that is towed from the College is responsible for payment of any towing and/or storage fee charged for such towing.

5. Notice of North Carolina State Law Concerning Towed Vehicles. Wake Technical Community College provides a petition/appeal procedure for the resolution of both towing and parking violations. Additionally, North Carolina G.S. 20-219.11 provides the following remedy:

   a) Whenever a vehicle with a valid registration plate or registration is towed as provided in G.S. 20-219.11, the authorizing person shall immediately notify the last known registered owner of the vehicle of the following:
      
      i. a description of the vehicle;
      
      ii. the place where the vehicle is stored;
      
      iii. the violation with which the owner is charged, if any;
      
      iv. the procedure the owner must follow to have the vehicle returned to him; and
      
      v. the procedure the owner must follow to request a probable cause hearing on the towing.

   b) The owner or any other person entitled to claim possession of the vehicle may request in writing a hearing to determine if probable cause existed for the towing. The request shall be filed with the magistrate in the county where the vehicle was towed. The magistrate shall set the hearing within 72 hours of his receiving the request.

   c) The only issue at this hearing is whether or not probable cause existed for the
If the magistrate finds that probable cause did exist, the tower’s lien continues. If the magistrate finds that probable cause did not exist, the tower’s lien is extinguished.

d) Any aggrieved party may appeal the magistrate’s decision to district court. For a more complete explanation of the above procedure, refer to North Carolina General Statutes, Chapter 20-219.11.

Section 4. Suspension of Parking Privileges
The Manager of Security may, in addition to any other penalty, suspend the parking privileges, for up to one year, of any individual found to be a repeat offender in flagrant violation of this Ordinance.

Section 5. Failure to Settle Fines, Fees, and Charges
Failure to settle outstanding traffic and parking fines, fees, and/or charges within fourteen (14) days after issuance of a citation can result in the College arranging for the collection of fees assessed against faculty, staff, students, and visitors in the following manner.

- Penalties owed by faculty members and other employees of the College may be deducted from payroll checks.
- Penalties owed by students will be forwarded to the Registrar and a hold is placed on the student’s records until the penalties are paid.

Section 6. Petition/Appeal Procedure
1. Individuals issued a parking and/or traffic citation may appeal the violation by returning within seven (7) calendar days of the date of the violation notice a Traffic Violation Appeal form to the Traffic Appeals Review Board. The Appeal forms are available at the switchboard located in Holding Hall on the Main Campus. Unless other procedures are specified in this section, the appeal and all arguments in support of the appeal will be submitted to the Traffic Appeals Review Board in writing. The Traffic Appeals Review Board Administrator will consider the written statement of the appellant and relevant documents or information submitted by the Manager of Security.

a) The Traffic Appeals Review Board Administrator shall review the appeal and respond by mail to the address provided on the appeal form.

b) Only official appeals received within seven (7) calendar days of the violation notice, excluding official College holidays, will be accepted for review. The right to appeal a violation notice is considered waived upon expiration of the 7-day appeal limitation period. No untimely appeals will be accepted for review.

c) If the appellant’s driving or parking privileges are suspended or revoked, the appellant will be allowed the opportunity to appear before the Traffic Appeals Review Board and provide relevant information in addition to the information previously provided in writing.

d) The decisions of the Traffic Appeals Review Board are final, except as otherwise provided herein and by College policy and procedure.

2. Appeal Hearings. Individuals whose (1) driving and/or parking privileges are suspended and (2) whose vehicle is towed may request a hearing to appeal the matter by submitting a written request to the Manager of Security. The written request for an Appeals Hearing must be received within fourteen (14) calendar days of the date of the decision giving rise to the appeal. The individual will be notified in writing of the hearing date, time, and location. Each individual is permitted one continuance of the hearing if he/she is unable to attend on the specified date.

3. The membership of the Traffic Appeals Review Board will consist of a Traffic Appeals Review Board Administrator, one (1) faculty member, one (1) staff member, and two (2) student members.

4. Appointment to Traffic Appeals Review Board. The President of the Faculty Association will appoint the faculty member. The President of the Staff Council will appoint the staff member. The Student Government Association President will appoint student members. The term of office will be for a one-year period, beginning in September and ending in August. There will be no limit to the number of terms served. Members will serve until successors are appointed.

a) The Manager of Security or his designee may attend each hearing to clarify any operational questions that may arise.

b) The Traffic Appeals Review Board Administrator will chair the hearing. The Administrator will bring the hearing to order and introduce the appellant, provide written or oral summation of the ruling, disperse completed appeal forms to each member of the board, maintain time restrictions with regard to testimony, dismiss the appellant, and call for a vote from each member of the Traffic Appeals Review Board. The Administrator will make note of the decision regarding the
appeal. The Administrator is a non-voting member of the Board, except when it is necessary to break a tie vote.

c) The Traffic Appeals Review Board will meet when necessary. The Traffic Appeals Review Board Administrator is responsible for notifying the appellant and Board members of the time, date, and location of the hearing. In emergency situations (such as a student not being allowed to register for classes or an employee not receiving an employment contract due to pending traffic appeals) and between regularly scheduled meetings of the Traffic Appeals Review Board, the Board Administrator may render decisions on traffic appeals.

d) The decision reached by the Traffic Appeals Review Board is final, except as otherwise provided by College policy and procedure. If the appeal is denied, payment of the fine is due immediately.

Section 7. Judgment Factors
1. All facts stated on the appeal form and presented by the appellant.
2. Any information provided by the Manager of Security to include previous violations records.
3. Information noted on the parking violation notice.
4. The issuing officer’s testimony.
5. The rules and regulations of this Ordinance.
Continuing Education
Website: http://conted.waketech.edu

BASIC SKILLS PROGRAM
Website: http://basicskills.waketech.edu
Dean: Lourdes Shelly
Phone: 334-1500
Email: loshelle@waketech.edu
- Adult Basic Education
- Grades 0-4 Program
- Grades 5-8 Program
- GED/High School Diploma Equivalency
- Adult High School Diploma
- Academic Improvement
- Adult High School Diploma Program
- Courses of General Interest
- Compensatory Education
- English as a Second Language

BTEC (BioNetwork) CAPSTONE CENTER
Website: http://www.ncbionetwork.org
Dean: Dr. Lin Wu
Phone: 513-2316
Email: lwu@waketech.edu
- BioNetwork
- Biowork
- Validation Academy
- BioBus

BUSINESS AND INDUSTRY SERVICES
Website: http://bic.waketech.edu
Dean: Wayne Loots
Phone: 335-1000
Email: waloots@waketech.edu
- Apprenticeship Training
- Focused Industrial Training
- New and Expanding Industry Training
- Management Development Program
- Small Business Center

EDUCATION SERVICES & TECHNOLOGY
Website: http://edservtech.waketech.edu
Dean: Ray Tims
Phone: 532-5523
Email: rtims@waketech.edu
- Non-Credit Computer Education
- Human Resources Development and Career Start Program
- Spanish Programs
- IT Related Services

EVENING AND WEEKEND PROGRAMS
Website: http://evening.waketech.edu
Dean: Karen Holding-Jordan
Phone: 866-5805
Email: khjordan@waketech.edu
- Occupational Training and Upgrading
- Wake County Community Schools Program
- Evening Curriculum Program

PUBLIC SAFETY AND SERVICE OCCUPATIONS
Website: http://publicsafety.waketech.edu
Dean: Anthony Caison
Phone: 335-1015
Email: amcaison@waketech.edu
- Corrections Education
- Fire Service Training
- Health Education Training
- Public Safety and Homeland Security
- Service Occupations

RECORDS AND REGISTRATION
Dean: Heather Henson
Phone: 866-5638
Email: hbhenson@waketech.edu
- Receptionist
- Records
- Registration
- Scheduling

COMMUNITY PROJECTS AND EDUCATIONAL PROGRAMS
Dean: Martha Williams
Phone: 866-5840
- Encore College Program
- Payroll Processes
- Lateral Entry Program
- Grants and Special Projects
Continuing Education Purpose

Wake Technical Community College plays an active role in the continuing education of the citizens of the Capital area. The College’s Continuing Education programs provide courses for those who need to train, retrain, and update themselves in a vocational or professional area, for those who desire instruction enabling them to grow in basic knowledge, improve in home and community life, and develop or improve leisure time activities, and for those individuals whose education stopped short of high school graduation.

Continuing Education Units

Wake Technical Community College awards Continuing Education Units (CEU’s) for non-credit courses and special activities. A permanent transcript will be established for each non-credit student. The transcript will be updated each time the student completes a non-credit course. CEU’s will be awarded for non-credit courses satisfactorily completed on the basis of one CEU for each ten hours of instruction. Fractions of CEU’s will be awarded. Thus, a 66-hour course meeting three hours per evening, two evenings per week for eleven weeks will earn the student 6.6 CEU’s. CEU’s will not be awarded to students who fail to complete a course satisfactorily. Certificates will be awarded upon completion of courses that earn CEU’s.

The Southern Association of Colleges and Schools became the first regional accrediting agency to require that all member institutions use the CEU to document non-credit special activities.

Students who have taken non-credit classes may request copies of their official transcripts by going to http://registration.curred.waketech.edu/transcripts.php.

Grading Policy

All classes except Adult High School classes use the S-U system.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Satisfactory (attended at least 90% of scheduled class hours)</td>
</tr>
<tr>
<td>*U</td>
<td>Unsatisfactory</td>
</tr>
<tr>
<td>*NG</td>
<td>No grade</td>
</tr>
<tr>
<td>*W</td>
<td>Withdraw</td>
</tr>
</tbody>
</table>

*CEU’s are not awarded with these grades.

ADULT HIGH SCHOOL

Adult High School classes use the A-F system.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Excellent</td>
</tr>
<tr>
<td>B</td>
<td>Above average</td>
</tr>
<tr>
<td>C</td>
<td>Average</td>
</tr>
<tr>
<td>D</td>
<td>Below average</td>
</tr>
<tr>
<td>F</td>
<td>Unsatisfactory</td>
</tr>
<tr>
<td>W</td>
<td>Withdrew</td>
</tr>
<tr>
<td>NG</td>
<td>No Grade</td>
</tr>
</tbody>
</table>

Admission & Registration

Any adult, 18 years of age or older and not enrolled in public school, may be admitted to an adult education class. In extenuating circumstances, and upon the approval of the appropriate public school principal or superintendent, a person 16-18 years of age may enroll in certain courses. A course schedule is published and made available to the public prior to the beginning of each term. Information about all continuing education classes may be obtained by calling the college at (919) 866-5800 or on the web at http://conted.waketech.edu/registration/abbreviations.php.

Class Locations

Many continuing education courses and services are provided on the main campus. Other classes are conducted in surrounding communities or within a particular business or industry in Wake County. Almost any course can and will be organized in other areas of the county when a sufficient number of citizens indicate an interest in having a class brought to a particular location, providing there’s an instructor and suitable facility.

Occupational Extension Course Repetition

Special provision legislation states that “Community colleges may permit a student to repeat a course more
than once if that student demonstrates that the course repetition is required by standards governing the certificate or licensing program in which the student is enrolled.”

A minimum registration fee will be charged those who have taken an occupational extension class more than twice in a five-year period and who are not exempt. (See Expenses section regarding exemptions.) An individual who takes a course more than twice will pay at least the amount an individual will pay who has taken it less than twice. A predetermined rate of $6.01 per scheduled hour will be charged to those individuals who have taken an occupational extension class more than twice and are not otherwise exempt.

Course Descriptions
Although course descriptions for continuing education courses are not provided in this publication, examples of the types of courses that are offered are listed. Specific course descriptions are furnished upon request. Courses, in addition to those listed in this publication, may be offered to meet expressed needs of the community when evidence of these needs is presented to the College.

Expenses
A registration fee is charged for Community Service and Occupational Continuing Education courses:

<table>
<thead>
<tr>
<th>Number of Hours</th>
<th>Registration Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-10</td>
<td>$50</td>
</tr>
<tr>
<td>11-30</td>
<td>$55</td>
</tr>
<tr>
<td>31-100</td>
<td>$60</td>
</tr>
<tr>
<td>over 100</td>
<td>$65</td>
</tr>
</tbody>
</table>

There is an additional fee for classes held at Community Schools.

The registration fee is waived for students enrolling in special classes for fire service, rescue, and law enforcement personnel, Wake Technical Community College full-time employees (one course per term), citizens over the age of 65, and prison inmates. The registration fee is not charged for Adult Basic Education programs, for preparatory instructional programs for the High School Diploma Equivalency Certificate (GED), for the Adult High School Diploma program, or for English as a Second Language program. There is a $7.50 fee for final GED testing.

Withdrawals and Refunds
Refund requests and withdrawals must be made in writing by the student (no exceptions). Refund request forms are available at each class site. A request for refund may be made by letter.

A 100-percent refund shall be made if the student officially withdraws from the class before the first class meeting by submitting a written request.

A 75-percent refund shall be made if the student officially withdraws from the class prior to or on the 10-percent date of scheduled hours. Any additional fees such as community school, facility, and lab fees are not refundable.

A full refund shall be made for classes canceled by the College. You do not have to request a refund.

Transfer Policy
Transfers to a different course in the same semester are allowed up until the 10-percent point of the total number of hours in both classes. A student may not transfer to a course that has passed the 10-percent point. Transfers from one semester to another are not allowed.

Transfer requests must be in writing. Requests received after the 10-percent deadline will not be considered, and a refund will not be processed.

Basic Skills Admission & Placement Policy
Wake Tech admits all adults into the College and makes every effort to place students in programs where they can experience success and meet their goals. Basic Skills offers educational opportunities in several areas, including Adult Basic Education (ABE), General Educational Development (GED), Adult High School (AHS), English as a Second Language (ESL), and Compensatory Education (CED). Placement into these programs is determined by standardized assessment tools. If students do not demonstrate progress in their placement level within 50 hours of attendance, they will be moved to another level in Basic Skills or referred to other College programs or an appropriate agency.

POLICY ON ADMISSION OF MINORS, NON-HIGH SCHOOL GRADUATES, INTO THE BASIC SKILLS PROGRAM
This policy applies to Wake Technical Community College and is in addition to State Board of Community College policies as published in North Carolina Administrative Code, 23 NCAC 2C.0301, Admission to Colleges and 23 NCAC 2C.0305, Education Services for Minors. This policy specifically addresses non-high school graduates’ admission into the Basic Skills Program excluding English
Non-high school graduates who are 16 or 17 years of age will not be allowed to enroll in the Basic Skills Program before a minimum of six months from the official date of withdrawal from a public or private high school or from a home school program.

The student must exhaust any suspension period given the student by a public or private high school or a home school program in addition to the College’s six-month waiting period before being eligible for enrollment in the College’s Basic Skills Program.

The Administration of Wake Technical Community College has the express authority of the Board of Trustees to implement necessary procedures for enforcement and regulation of this policy.

### Basic Skills Program

Basic Skills programs are offered throughout Wake County to help adults:

- Learn to read.
- Improve math, reading, and writing skills.
- Earn an adult high school diploma or GED high school diploma equivalency.
- Learn English as a second language.
- Develop basic skills needed in the work place.

Basic Skills programs also help:

- Developmentally disabled persons achieve their potential.
- Families strengthen literacy skills and family bonds.
- Underemployed/unemployed persons prepare for employment or further education.
- Business and industry develop a highly skilled work force.

### Adult Basic Education

Adult Basic Education is designed to assist individuals who need to improve their skills in reading, writing, and/or mathematics. Instruction covers the fundamentals of mathematics, reading, and oral and written communications.

There are no fees or charges of any kind. All materials have been especially prepared for adults and instructional plans emphasize individual needs and interests. Students enroll in Adult Basic Education to improve skills for the work place, achieve personal goals, and/or enroll in one of the College’s high school completion programs. Classes are offered on the main campus, at the Adult Education Center, and at community sites throughout Wake County.

### General Educational Development (GED)

The General Educational Development program offers instruction for adults who are preparing for the GED exam. Instruction covers high school level reading, writing, mathematics, science, and social studies skills. Students may prepare for the exam on the main campus, at the Adult Education Center, at a community site, and also by enrolling in the college’s GED online program. Materials are provided to students, and there is no tuition.

Those achieving a passing score on all five sections of the exam receive a high school equivalency diploma from the North Carolina State Board of Community Colleges. The GED is generally recognized as a high school equivalency for purposes of college admission and employment.

Wake Technical Community College has two GED Testing Centers, one located on the main campus and the other at the Adult Education Center. Students are required to pay a (one-time only) $7.50 testing fee when they take the official GED exam.

### Adult High School Diploma

The Adult High School Diploma program is provided through a cooperative arrangement between Wake Technical Community College and the Wake County Board of Education with the College serving as the administering agency. Adult High School provides academic courses in a lab setting. Students are placed in courses in English, mathematics, social studies, science, and in electives based on their previous high school transcripts and acceptable scores on a standard battery of tests administered prior to program admission.

The Adult High School diploma program is offered at the Adult Education Center. Upon completion of “job ready” activities, the required credits, and successful completion of the North Carolina Competency Test, students are awarded an adult high school diploma. There are no tuition fees; however, students must purchase some books and materials.

### Compensatory Education

Compensatory Education is for adults with developmental disabilities who want to improve their academic, social, and vocational skills and achieve their full potential. The Compensatory Education program operates year-round in close coordination with mental health professionals and agencies.
In addition to classes offered in cooperation with area service providers and agencies, some locations serve students from the broader community. Parents or guardians of adults with developmental disabilities who would like additional information about the program should contact the Compensatory Education coordinator. The program is offered free of charge.

**ENGLISH AS A SECOND LANGUAGE**

English as a Second Language (ESL) is designed for students whose native language is not English. The program focuses on addressing English for life skills, such as filling out various forms, seeking medical attention, or helping parents of young children to navigate the public school system. ESL classes give students the opportunity to increase their level of communication with emphasis on speaking, listening, reading and writing skills. Instructors also assist students in pre-employment preparation, community interaction, cultural enrichment, and professional and academic advancement.

ESL classes are offered free of charge at the Adult Education Center and various locations throughout the county. Students may enroll at any location until the classes are full.

**HEP PROGRAM**

The High School Equivalency Program (HEP) is a grant from the United States Department of Education, Migrant Education Division, to Wake Technical Community College and a collation of service organizations to provide migrant and seasonal farm workers and their families the necessary training to obtain a GED (high school equivalency certificate).

**OBJECTIVES**

Offering short-course-based hands-on training in a land facility in the area of biotechnology, biomanufacturing and pharmaceutical operations.

Establishing the BioNetwork Bus (Mobile Biotechnology Training Laboratory). The BioNetwork bus is a self-contained, state-of-the-art mobile laboratory that travels with a qualified, industry-experienced instructor to provide a variety of customized, versatile, hands-on training solutions. Examples include: Incumbent worker training; Small groups of in-house short course training; Skills development; Extending local community college capabilities; Bringing specialized training equipment to company sites for training.

**Business and Industry Services**

In today’s fast-paced digital economy, businesses must seek new knowledge and leverage new technologies if they are to survive and grow. The Business and Industry Services Division serves the lifelong learning needs of the business community.

The Business and Industry Center (BIC) is located at the Western Wake Campus in Cary where it provides classes and seminars. It also offers customized employee training at employer sites as well as other area locations, including our new Northern Campus.

**APPRENTICESHIP TRAINING**

Wake Tech has been designated by the North Carolina Community College System as a center for formal apprenticeship training. The College assists companies that are participating in a customized apprenticeship training program by providing the related classroom instruction.

**FOCUSED INDUSTRIAL TRAINING (FIT)**

Wake Tech assists area industries in training and retraining employees with courses that range from basic fundamental skills to sophisticated technical skills to skills in supervision, management, PLC, CNC, Six Sigma, Lean Manufacturing, Welding, Electricity and more.

**NEW AND EXPANDING INDUSTRY (NEIT)**

The new and expanding industry training program provides customized training assistance in support of new, full-time production positions created in the state of North Carolina. This enhances the growth potential of companies located in the state while simultaneously preparing North Carolina’s workforce with the skills essential to successful employment in emerging industries.

**PROFESSIONAL DEVELOPMENT AND CORPORATE TRAINING**

To meet the supervisory and managerial needs of business and industry, Wake Tech offers management development programs...
programs in sales training, computer skills, problem solving, office occupations, project management, import logistics and international marketing.

**SMALL BUSINESS CENTER (SBC)**
Wake Tech’s Small Business Center (SBC) works to increase the success rate and number of viable small businesses in North Carolina by providing high quality, readily accessible assistance to prospective and existing small business owners and their employees. The Small Business Center provides education and training, information, and referral.

The Small Business Center has a library of printed materials available to assist with small business research and problem solving. The library includes books, pamphlets, magazines, trade journals, and a wide variety of tapes and videos.

Confidential counseling services and access to resource libraries are free of charge along with seminars and workshops.

**Records & Registration**
This department ensures accuracy and quality in all Continuing Education programs to comply with the NC General Statues, Title 23 of the NC Administrative Code, Continuing Education Guidelines, Numbered Memoranda and the Colleges’ Accountability and Credibility Plan in all of Continuing Education registration and reporting processes.

**Education Services and Technology**

**HUMAN RESOURCES DEVELOPMENT**
Job Skills Human Resources Development (JSHRD) is a pre-vocational program offered by Wake Technical Community College. The program is designed to help unemployed and/or underemployed adults, ages 18 and older, enhance their existing skills and improve their employment opportunities. Courses are designed to meet the students' needs and to focus on skills that promote success in finding and maintaining employment. Class length and times vary.

One-on-one and group counseling sessions assist students in identifying and enhancing personal characteristics that lead to success with career goals. The following are standard components in JSHRD: self-appraisal, career planning, resume preparation, interviewing, job search strategies, and communication skills.

The workforce human resources development (HRD) program provides pre-employment training, career assessment, and job assistance for adults. The goal of the program is employment or further education.

**NON-CREDIT COMPUTER EDUCATION PROGRAM**
The Non-Credit and Weekend Computer Education program provides computer courses that help adults develop new hardware and software skills and enhance existing technology skills. The program also provides industry standard certification preparation courses for individuals seeking certification in the following areas: A+ Hardware and Software, Oracle, Oracle DBA, Oracle PL/SQL, Java, Computer Security, Visual Basic, Networking, and Linux, through traditional and online programs.

The goal of the program is to enrich personal and workplace computer skills, enhance employment opportunities and job advancement. The following are examples of the large variety of courses offered for this purpose:

- ASP .NET
- Digital Photography
- Dreamweaver
- Flash
- Graphic Design
- Introduction to Personal Computers and Windows
- Microsoft Office
- Programming Languages
- 3-D Computer Graphics, Modeling & Animation
- Photoshop
- AutoCAD for Windows
- MySQL

**CAREER START**
The Career Start Program provides a vital foundation and starting point for individuals to gain or increase their employment opportunities. This is done through Career Awareness, Remediation, Educational Training, Employment Placement and Resource Development, thus the title of the program CAREER START. The targeted population for this program is the Food Stamp Employment & Training (FSE&T) participants. The primary objective of Career Start is to better prepare individuals for the workforce by providing pre-employment skills training through Wake Technical Community College's Human Resources Development, Basic Skills, Occupational Extension, or Curriculum divisions. The job search component is conducted by the Employment Security Commission. The success of this program is the collaborative efforts between the Department of Human Services, the Employment Security Commission and Wake Technical Community College.

**SPANISH PROGRAMS**
The Spanish Program implements and interfaces programs for the Hispanic/Latino community. These include LaPlaza, Continuing Education computer programs in Spanish, and general interest courses. The program also maintains the Hispanic/Latino portal through contacting all applicable divisions, updating, and correlating all Wake Tech offerings.

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that are of interest to the Hispanic/Latino community into a one-stop information center.

**Evening and Weekend Programs**

**OCCUPATIONAL TRAINING AND UPGRADING**

An ongoing priority of Wake Technical Community College is to offer evening and weekend programs that provide credit and non-credit courses appropriate to the needs of the working adult. These programs focus on assisting adult students, who are primarily part-time students, in developing new skills to obtain employment or to change career paths, and on helping students upgrade their skills to maintain employment. Programs for personal development are also offered in the evening.

Primary to this effort is the resolve to offer evening sections of each program that the College provides. This occurs as the need is introduced and resources permit. Offering a series of evening courses from a program for certificate credit is another strategy used by the institution for meeting the educational needs of working students. A third strategy employed is to provide a variety of single courses or a cluster of related courses that provide job specific information and that may apply toward credit should a student decide to enroll in a program.

Wake Tech holds the position that students should have the opportunity to apply the knowledge and skills learned in the classroom in a work setting, and hence provides a cooperative education program for this purpose. Evening students may take advantage of this opportunity upon request. Since Wake Tech’s evening students are usually attending school at night on a part-time basis while working during the day on a full-time basis, cooperative education placements are generally not available for part-time evening students. However, if an evening student wishes to participate in the cooperative education program, he or she should contact the Director of Cooperative Education.

Other services available to students enrolled in the Evening Program include the following: tutorial assistance and individualized learning programs through the Individualized Learning Center or Special Populations, library services, counseling and registration services, and book store operations. Evening students enrolled for at least nine (9) credit hours, having paid the required administration fee, may participate in all student activities including the Student Government Association.

Occupational training and upgrading courses provide training for specific job skills essential to successful employment.

New skills are taught and present skills are updated in order to make an employee more efficient on the job, to improve the chances for advancement to a new job, or to meet legislated requirements. The following are examples of the large variety of courses offered for this purpose:

- Automotive Repair
- Building Trades
- Business Management
- Computer Skills
- Electrical-Electronics Trade
- Foreign Languages
- Internet-based Instruction
- Machine Trades & Welding
- Medical Terminology, Coding, and Transcription
- Plumbing
- Real Estate Updates

**COMMAND SPANISH**

This program is a non-academic, non-grammar-based training, designed to provide employers in business, industry, or organization a quick and easy way to extend professional staff development to their employees in limited amounts of everyday Spanish. Students will learn to speak practical, common phrases and questions in Spanish that are occupational specific, as well as comprehend many basic expressions. This training covers phrases, commands, and questions needed by non-Spanish speakers in workplace environments whereby Spanish speakers are served or employed. The training is offered at a Wake Tech site, or at your job site, during day or evening hours. Classes include but are not limited to:

- Spanish for Requesting Personal Information
- Spanish for Banking
- Spanish for School Teachers, Administrators, and Support Staff
- Spanish for Hotel and Motel Staff
- Spanish for Restaurant Staff
- Spanish for Retail Sales Staff
- Spanish for Child Care Staff
- Spanish for Construction Sites
- Spanish for Industry, Manufacturing and Warehousing
- Spanish for Physician Offices
- Spanish for Nursing
- Survival Spanish for Jail Facilities
- Survival Spanish for Correctional Staff
- Spanish for Dental Staff
- Spanish for Mission Teams
- Spanish for Eye Care Providers
- Spanish for Custodial and Maintenance Supervisors

**MEDICAL HEALTH CARE OFFICE OCCUPATION CERTIFICATE PROGRAM**

This certificate program is an intense, 36-week (9 months) study that introduces you to the entry-level skills needed to become a Certified Coding Associate (CCA). The course will include medical terminology, medical coding, and medical billing and insurance.
CONTINUING EDUCATION

WAKE COUNTY COMMUNITY SCHOOL PROGRAM
The goal of Community Schools is to make quality educational and recreational experiences available in convenient locations at reasonable costs. Through interagency cooperation a variety of offerings are provided for the general public. Wake Technical Community College actively supports and participates in this program by offering numerous credit and continuing education courses at local schools four evenings per week.

EVENING CURRICULUM PROGRAM OFFERINGS
For detailed information concerning Wake Tech's Evening Program offerings, refer to those sections of this catalog that contain descriptions of the day offerings. Current curriculum programs offered in the evening and on Saturdays include:

COLLEGE/UNIVERSITY TRANSFER
GENERAL EDUCATION
ASSOCIATE IN APPLIED SCIENCE
DIPLOMAS
PREPARATORY COURSES

WEEKEND PROGRAMS
Computer Programming:
Internet Programming
Visual Basic Programming
Early Childhood Credential Courses
Information Systems: Networking
Networking Technology: MCSE
Visual Basic Certificate
Assorted courses from other curricula are also offered evenings and Saturdays.

Public Safety & Service Occupations Division
The following program areas provide training to public safety personnel and to persons who wish to increase their individual competencies in specialized occupational areas.

HEALTH EDUCATION SERVICES
Courses are designed to meet the needs of local EMS agencies, healthcare providers, and the public with emphasis on emergency patient care in traditional pre-hospital and nontraditional environments. Health education courses are also designed to assist individuals desiring employment or retraining in health institutions or related fields.

FIRE SERVICE TRAINING
Fire Service Training is delivered directly to individual fire departments. Training held in local fire departments allows personnel to utilize equipment they will actually use in controlling fires. Fire Service classes include:

- Arson and Unlawful Burning
- Fire Apparatus Practices
- Fire Fighting Practices
- Forcible Entry
- Hazardous Materials
- Ladder Practices
- Portable Fire Extinguishers
- Protective Breathing Equipment
- Rescue Practices
- Rope Practices
- Salvage and Overhaul Practices
- The Company Officer
- Ventilation

Related courses in Fire Service Training include industrial brigade training, home fire safety, search, and rescue.

SERVICE OCCUPATIONS
This program trains individuals in the area of food service, lodging, travel information, and nursing assistant. The primary objectives include providing employers with well-trained personnel to operate their business and developing individuals with skills that will qualify them for better employment opportunities. Hospitality training is
arranged and scheduled in accordance with the needs of the industry.

CORRECTIONS EDUCATION
Corrections Education is delivered to immured individuals in Wake County’s judicial system. The primary purpose of the training is to increase the safety of the general public by reducing the recidivism rate through training. Vocational training is also provided in the areas of plumbing, electrical wiring, heating and air conditioning and carpentry.

PUBLIC SAFETY AND HOMELAND SECURITY
Public Safety and Homeland Security courses are designed as in-service and pre-service education for those engaged in law enforcement activities and are provided at the request of these agencies. Program emphasis is on legal and technological law enforcement advancements. Courses such as the following are offered in many areas:

- Child Passenger Safety Training
- Community Policing
- Criminal Investigation
- Domestic Disturbance Response
- D.W.I. Detection
- Effective Report Writing
- Firearms Training
- First-Line Supervision
- Homeland Security
- Juvenile Law
- Laws of Arrest, Search, and Seizure
- Motor Vehicle Laws
- Narcotics Investigation
- Radar Certification
- Spanish for Law Enforcement
- Traffic Accident Investigation

PAYROLL PROCESSES
Manages and ensures the accuracy of the large number of adjunct faculty contracts within the Continuing Education Services Division generated on a monthly basis.

LATERAL ENTRY PROGRAM
Lateral Entry is an alternative route to obtaining a North Carolina teaching license. Eligible individuals must have completed a Bachelor’s degree (at least 2.5 GPA) and have 24 credit hours completed in the subject area they wish to teach. Wake Tech offers several Lateral Entry competencies through curriculum and continuing education courses.

GRANTS AND SPECIAL PROJECTS
This department provides program management for division and departmental projects, develops program strategies, goals, and time frames for program implementation, and seeks funding to implement and sustain new and existing programs for workforce development through special projects and grants.

We are here to help!

LOCATION
Main Campus (401 South) in Holding Hall, Room 131

PHONE
(919) 866-5800

WEBSITE
http://conted.waketech.edu/

Community Projects and Educational Programs

ENCORE COLLEGE PROGRAM
Encore College is a program designed for adults 55 and over to support lifelong learning, wellness and creative retirement through classes offered at the Western Wake Campus of Wake Technical Community College. This program is for “baby boomers” who are getting ready to retire or transition from their current career and are looking to “bridge the gap” to a new “Encore Career”. The program will assist participants in transferring their previous success into giving back to the community by working in a leadership role in the non profit sector. The Encore program consists of Social Services, Retirement Planning workshops, Healthcare, and Enrichment classes.
Academic Recognition

PRESIDENT’S LIST
The College publishes a “President’s List” at the end of each academic term. The list is composed of students who have achieved a grade-point average of 4.0 at the end of that particular term based on a minimum of 12 credit hours attempted in the Fall and Spring semesters; a minimum of 8 credit hours must be attempted for the Summer term.

DEAN’S LIST
The College publishes a “Dean’s List” at the end of each academic term. The list is composed of students who have achieved a minimum grade-point average of 3.50 at the end of that particular term based on a minimum of 12 credit hours attempted in the Fall and Spring semesters; a minimum of 8 credit hours must be attempted for the Summer term.

PRESIDENT’S AWARD FOR EXCELLENCE
The President’s Award for Excellence is the top academic award presented by Wake Technical Community College. This award recognizes students who excel in academic achievement, attitude, attendance, and motivation.

Seven students (one from each academic division) are selected to receive the President’s Award for Excellence during each calendar year. Division deans and instructors select award recipients.

Each recipient receives a personal plaque of commendation, presented by the College President. Recipients’ names are engraved on a trophy that is permanently displayed in the College’s trophy case.

WHO’S WHO AMONG STUDENTS IN AMERICAN JUNIOR COLLEGES
Each spring, second-year students are nominated for Who’s Who Among Students in American Junior Colleges based upon the student’s scholarship ability; participation and leadership in academic and extracurricular activities; citizenship and service to the College; and potential for future achievement.

Attendance Policy
Absences from class are a serious deterrent to good scholarship. The College, therefore, stresses regular class attendance, but recognizes that students should have an opportunity to develop personal responsibility and should have some discretion in attendance to meet the demands imposed by other responsibilities.

Students anticipating absences should notify their instructor in advance. If prior notification is not possible, the student should contact the instructor immediately upon returning to the College to determine the next course of action.
Students are expected to be in attendance at least 90 percent of all scheduled class hours. In the event that a student’s absences in a class exceed 10 percent and the absences are not justified to the satisfaction of the instructor, the instructor will submit Student Course Withdrawal Form to the Financial Aid Office or to the email drop box designated for withdrawals to document the last date of attendance.

Student Course Withdrawals received for students with a last day of attendance prior to or on the 60-percent point of the term will result in a grade of "W."

Student Course Withdrawals received for students with a last day of attendance after the 60-percent point of the term will result in a grade of "WF" or "WP" as indicated by the faculty. A grade of "WF" indicates that the student was failing at the time of withdrawal and will count the same as an “F” grade in the grade-point average calculation. A grade of "WP" indicates that the student was passing at the time of withdrawal and will count the same as a “W” grade in the grade-point average calculation.

Add, Audit & Withdrawal Policies

ADDS
A student may change his registration by adding a course through the last day to add, as published in the academic calendar. A student who finds it necessary to add a course should confer with his advisor. Adds may be completed via WebAdvisor until the end of the published registration period. Adds after the registration systems close must be submitted in person to the Enrollment and Records Services Division on a completed Request for Registration Override form signed by the dean.

DROPS
A student may change his registration by dropping a course prior to the 10-percent (subject to change) date of the semester/term. A student who finds it necessary to drop a course should confer with his advisor. Drops may be completed via WebAdvisor until the end of the published registration period. Drops after the 10-percent date of the semester/term and on or prior to the 60-percent point of terms are considered withdrawals and must be submitted to the Enrollment and Records Services Division on a Student Course Withdrawal form. A drop during this time frame will result in a grade of “W.”

A student who drops a class is advised that this may affect his financial aid. Financial aid students may contact the Financial Aid office to determine whether funds will be affected.

AUDITS
Registration (including tuition charges) for courses to be audited is the same as for courses to be taken for credit. Audit courses carry no credit hours and earn no grade.
points. The student must submit a Request to Audit form to the Enrollment and Records Services Division no later than the last day to add. Departmental approval to audit is not required to audit at this point.

Students who would like to be considered for audit after the last day to add must obtain the signature of the instructor and dean or dean’s designee on the Request to Audit form before submitting it to the Enrollment and Records Services Division. Audit requests will not be accepted after the mid-point of the term.

WITHDRAWAL POLICY
A student who finds it necessary to withdraw from a course(s) or the College must complete a Student Course Withdrawal Form. The form must be presented to the instructor of each course from which the student is withdrawing. The instructor must note the student’s last date of attendance on the form. The student must also obtain signatures of Financial Aid staff or Veterans’ Affairs staff if receiving financial aid or veterans’ benefits. The student should then submit the completed form to the Registration and Student Records Services Division for grade processing.

When the student’s last date of attendance is on, or prior to, the 60-percent point of the term, the student will receive a grade of “W.” A grade of “W” does not affect the grade-point average. Withdrawal forms should be submitted to Enrollment and Records Service Division within two weeks after the last date of attendance instead of being held until the end of the semester.

When the Withdrawal Form is submitted after the 60-percent point of the term, the student will receive a grade of “WF” or “WP” as indicated by the course instructor. A grade of “WF” indicates that the student was failing at the time of the withdrawal and will count the same as an “F” grade in the grade-point average calculation. A grade of “WP” indicates that the student was passing at the time of the withdrawal and will count the same as a “W” grade in the grade-point average calculation.

Students enrolled in courses offered at times other than the standard sixteen-week semester and the regular summer term should consult the Curriculum Education Credit Class Schedules booklet to determine the last day to withdraw and receive a grade of “W.”

Enrollment Status
A full-time student is a person enrolled for twelve or more semester hours of credit in the fall or spring semesters.

A part-time student is a person enrolled for less than twelve semester hours of credit pursuing a degree, diploma, or certificate program in the fall or spring semesters.

A special student is any student who is enrolled in a credit course, but is not working toward a degree, diploma, or certificate.

For financial aid purposes only, full-time status is 12 hours credit or more each semester.

Grades
Students are graded according to the following grade-point system in all courses, except Pre-Curriculum.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Per Credit</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4</td>
<td>Excellent</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
<td>Very Good</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
<td>Poor</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
<td>Failing</td>
</tr>
<tr>
<td>W</td>
<td>0</td>
<td>Withdrawal (prior to 60%)</td>
</tr>
<tr>
<td>WF</td>
<td>0</td>
<td>Withdrawal – Failing (after 60%)</td>
</tr>
<tr>
<td>WP</td>
<td>0</td>
<td>Withdrawal – Passing (after 60%)</td>
</tr>
</tbody>
</table>

Students in Pre-Curriculum courses are graded according to the following system.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Per Credit</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4</td>
<td>Excellent</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
<td>Very Good</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
<td>Failing</td>
</tr>
<tr>
<td>W</td>
<td>0</td>
<td>Withdrawal (prior to 60%)</td>
</tr>
<tr>
<td>WF</td>
<td>0</td>
<td>Withdrawal – Failing (after 60%)</td>
</tr>
<tr>
<td>WP</td>
<td>0</td>
<td>Withdrawal – Passing (after 60%)</td>
</tr>
</tbody>
</table>

Pre-Curriculum courses do not earn grade points.

Students in Real Estate Fundamentals (RLS 112) are graded according to the following system. The North Carolina Real Estate Commission requires a higher minimum passing score than Wake Tech.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Per Credit</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4</td>
<td>90 – 100</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
<td>80 – 89</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
<td>Below 80</td>
</tr>
<tr>
<td>W</td>
<td>0</td>
<td>Withdrawal (prior to 60%)</td>
</tr>
<tr>
<td>WF</td>
<td>0</td>
<td>Withdrawal – Failing (after 60%)</td>
</tr>
<tr>
<td>WP</td>
<td>0</td>
<td>Withdrawal – Passing (after 60%)</td>
</tr>
</tbody>
</table>

The following grades will not be used in computing the grade-point average.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU</td>
<td>Audit</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete</td>
</tr>
<tr>
<td>IP</td>
<td>In Progress (Pre-Curriculum and Multi-entry/multi-exit classes only)</td>
</tr>
<tr>
<td>NA</td>
<td>Never Attended</td>
</tr>
<tr>
<td>P</td>
<td>Pass (Cooperative Education Only)</td>
</tr>
<tr>
<td>W</td>
<td>Withdrew</td>
</tr>
<tr>
<td>WP</td>
<td>Withdraw Passing (after 60%)</td>
</tr>
<tr>
<td>T</td>
<td>Transfer Credit</td>
</tr>
<tr>
<td>X</td>
<td>Credit by Examination</td>
</tr>
</tbody>
</table>
A grade of Incomplete (I) will be given only when circumstances justify additional time for the completion of a course. An Incomplete must be removed by the end of the fifth full academic week of the term immediately following that in which the Incomplete was incurred. If it is not removed by this date, the Incomplete will be recorded as an “F” in the student’s permanent record.

The grade awarded for participation in Cooperative Education will be either “P” (Pass) or “F” (Fail). These grades are not used in computing the grade-point average. Grades are available online approximately two business days after the deadline for faculty to submit final grades. To view grades, access WebAdvisor. Click on Current Students and select Grades under Academic Profile. Grades are mailed at the end of the semester only to students who complete a Request for Official Grade Mailer. Information regarding grade appeals is listed within the Student Rights and Responsibility policy.

**COMPUTATION OF GRADE-POINT AVERAGE**

The following process is used to determine a student’s grade-point average (GPA):

1. Multiply the number of semester hour credits assigned a course by the number of grade points for the grade received.
2. Add all the grade points together.
3. Divide the total grade points by the total number of semester hours attempted including grades of “F” and “WF.”
4. Whenever a course is repeated, beginning Fall 2006, the best grade (except when the repeat results in a grade of I, IP, NA, W, AU, or X) will be used in the grade-point average computation.

**Example of Grade-Point Average Computation**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Hour Credit</th>
<th>Grade Received</th>
<th>Per Semester Hour</th>
<th>Grad Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>3</td>
<td>A</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>Physics</td>
<td>3</td>
<td>D</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Economics</td>
<td>3</td>
<td>B</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Chemistry</td>
<td>5</td>
<td>F</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Psychology</td>
<td>3</td>
<td>C</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td></td>
<td><strong>30</strong></td>
<td></td>
</tr>
</tbody>
</table>

Thirty grade points divided by 17 hours attempted equals a 1.76 grade-point average for work attempted in this example. A GPA of 2.0 constitutes a “C” average. Hours attempted and grade points earned in previous terms should be included in the above procedures to determine the cumulative grade-point average.

**COURSE REPETITION**

A student may repeat any course twice; each attempt will be recorded on the student’s official academic record. The best grade earned in all the attempts is calculated in the GPA. The dean responsible for the supervision of the course being taken may approve exceptions to this policy.

**GRADE POSTING BY FACULTY**

The Family Policy Compliance Office (FPCO), which is responsible for the administration of Family Educational Rights and Privacy Act (FERPA) at schools and colleges, has issued a technical letter stating that grades may not be posted by Social Security Number (SSN), or part thereof, without the written consent of the student.

Wake Tech faculty are neither required nor are they prohibited from posting grades. However, they may exercise this option only with the student written consent to post grades. A FERPA Consent to Post Grades form should be distributed by the instructor of each class for which he or she will be posting grades. Only the grades of those students who give consent may be posted, and even with consent, the full student social security number must never be used. The complete form should be given to the instructor’s dean with their final grade report at the end of the term for filing for a period of no less than 3 years. After that time they may be destroyed if no litigation, claim, audit, or other official action involving the records has been initiated. If official action has been initiated, destroy grade report in office after completion of action and resolution of issues involved. (Item 45550, Records Retention and Disposition Schedule Amendment, as amended August 1, 2002)

For faculty who utilize Blackboard technology, written consent is not required to post a student’s grade to the section of the student site where only the student can access via a secure password (i.e. individual grade books). However, faculty may not post a listing of grades to their Blackboard site where all class members have access because that would be disclosing personally identifiable information without student consent.

Faculty may send individual grades to students via email only when there is written authorization on file from the student to do so. Authorization should reside with the instructor and the college registrar. However, WebAdvisor will be the official means of final grade notification.

**GRADE FORGIVENESS**

A student who has not been enrolled in curriculum courses in the college for 60 consecutive months (5 years) may submit a Grade Forgiveness request to Enrollment and Records Services Division. Under this policy, the student may request that his or her previous grades of “WF” or “F” not be used in calculating the cumulative grade point average. However, the grades will remain on the transcript, but they are not included in the GPA. This may not have any bearing on how another institution calculates the student’s GPA.

Prior to re-evaluation, the student must be readmitted to the college, register for courses, and complete at least 12 credit hours of course work, at the 100 level or above, with a minimum quality point average of 2.0. A student may only request grade forgiveness once in his or her academic career at the college. Re-evaluation will be processed.
SATISFACTORY ACADEMIC PROGRESS
At the end of each academic term, each student’s cumulative and semester grade-point averages are computed. Students who fall below the required cumulative grade-point average, based on credit hours attempted, will be placed on academic probation. Students will be notified of their academic probation status by letter from the Vice President of Curriculum Education Services. Students on academic probation are prohibited from registering for the next term unless:

1. The student obtains a Permit to Register/Plan of Action form signed by his/her advisor, or
2. The student achieves the minimum 2.0 cumulative grade-point average.

SATISFACTORY PROGRESS IN HEALTH SCIENCES CURRICULA
In the Health Sciences curricula there are certain policies relating to student progress that are different from the general policies of the College. These policies will be given to each student in a health-related curriculum.

SATISFACTORY PROGRESS IN PRE-CURRICULUM COURSES
The objective of the Pre-Curriculum program is to assist students in obtaining those academic skills necessary to succeed in a curriculum program. Therefore, a student taking required Pre-Curriculum courses must earn a grade of “C” or better in order to progress to the curriculum program or to the next Pre-Curriculum course level. A grade of “F” requires the student to repeat the course.

GRADUATION REQUIREMENTS
In order to be eligible for graduation, a student must complete all prescribed courses for the curriculum in which he/she is enrolled. Students must have a cumulative grade-point average (GPA) of 2.0 in their program of study. Grade-point averages are calculated by dividing the total number of grade points earned by the total number of credit hours attempted. Courses used in this calculation are those completed at Wake Technical Community College that are listed in the student’s curriculum outline as minimum requirements and any additional courses approved by the appropriate academic dean.

Students must complete a minimum of 25 percent of hours required for a degree, diploma, or certificate in residence at Wake Technical Community College. Final course work must be completed in residence at Wake Technical Community College.

In order to graduate, each student must fulfill all financial obligations to the College, including graduation fees. Graduation fees are to be paid at the time of registration for the term in which graduation requirements will be completed.

Note: Students pursuing a degree or diploma are not normally eligible to receive a certificate in the same program. Requests for exceptions will be considered when a specific and immediate need exists for purposes of employment or promotion. Students pursuing a degree or diploma who find it necessary to scale down their objective to a certificate should contact the Enrollment and Records Services Division to determine if they may be eligible for a certificate.

Graduation
Graduation exercises are held at the end of summer term for all students who have completed degree or diploma requirements since the last graduation. Prospective graduates must request a graduation clearance by submitting an “Application for Graduation” form to the Enrollment and Records Services Division. The deadline for submitting this application is the last day of registration of the term in which the student will complete the requirements for the degree, diploma, or certificate.

PERSISTENCE TOWARD GRADUATION
Information concerning the rate of persistence toward graduation for Wake Technical Community College may be obtained from a member of the counseling staff.

Policy Changes
Any statement in the Wake Tech Catalog is subject to change by the College.

New policies and upcoming policy changes will be communicated to students on the official Updates Web page, located at http://Updates.waketech.edu and via their assigned my.waketech.edu.

Students are provided an email address upon acceptance and enrollment to the College. Should they choose not to receive communication via e-mail, they must refer to the official Updates Web page for information.

Pre-Curriculum
The Pre-Curriculum program is designed to prepare students for college-level coursework by helping them develop the reading, English, and mathematics skills required for entry into curriculum courses. Any person who has a high school diploma or a GED may enroll in pre-curriculum courses. The number of courses and the time required to complete them will vary. Some students may need only one course, while others may take several semesters to complete a series of courses. Students are placed in pre-curriculum courses on the basis of their admissions test scores, the recommendation of their advisor or instructor, or their own voluntary selection.

Students who require pre-curriculum courses in more than one discipline will be required to take a study skills course, ACA 090. This course has been designed to improve pre-curriculum students’ success in both pre-curriculum and
curriculum courses. Depending on individual circumstances and pending advisor approval, students may take pre-curriculum and curriculum courses during the same term. Most pre-curriculum courses are offered every term, both day and evening. A student taking required pre-curriculum courses must earn a grade of "C" or better on a seven-point scale to progress to the curriculum program or next pre-curriculum course level. A grade of "F" requires the student to repeat the course.

**Pre-Curriculum Courses:**
ENG 070, ENG 080, ENG 090  
RED 070, RED 080, RED 090  
MAT 050, MAT 060, MAT 070, MAT 080  
ACA 090

**Prerequisites**

Some courses may have prerequisite or co-requisite course requirements, which ensure that the student is ready to move on to a higher level course. All students are required to successfully complete the course prerequisites and co-requisites listed before enrolling. Students who do not have confirmed prior credit, equivalency via placement test scores, or transfer equivalency that satisfies the stated prerequisites and co-requisites may be administratively dropped from the course. Course prerequisites and co-requisites may be found by clicking on the course number on WebAdvisor course schedules.

As this information is public and available, students who drop on their own or due to a faculty-requested drop after the first day of class and before the published 10% date, are only eligible for a 75% refund. Therefore, students are advised to review course prerequisites and co-requisites carefully before enrolling.

**Security of Student Records**

**ANNUAL NOTICE TO STUDENTS OF THEIR RIGHTS UNDER THE FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT OF 1974**

Annually, Wake Technical Community College informs students through the publication of the Student Handbook of the Family Educational Rights and Privacy Act of 1974, as amended. This act, with which the College intends to comply fully, protects the privacy of educational records, establishes the rights of students to inspect and review their educational records, and provides guidelines for the correction of inaccurate or misleading data through informal and formal hearings. To the extent consistent with the Act, students who seek the correction of inaccurate or misleading data or who otherwise have complaints should follow the grievance procedure contained in this Handbook. Students also have the right to file complaints with the Family Educational Rights and Privacy Act Office concerning alleged failures by the College to comply with the Act.

Wake Technical Community College's policy establishing its intent to comply with the Act is published in the College catalog. Procedures implementing the provisions of the Act are published in the Student Handbook. Questions concerning the Act and Wake Technical Community College's policy should be referred to the Enrollment and Records Services Division.

**CARE OF RECORDS: POLICIES AND PROCEDURES**

Wake Technical Community College, in the execution of its responsibilities to students, maintains accurate and confidential student records. The College staff recognizes the rights of students to have access to their educational and personal records in accordance with College policy and the Family Educational Rights and Privacy Act of 1974.

**DEFINITION OF TERM “EDUCATIONAL RECORDS”**

The term “educational record” as defined under the provisions of the Act include files, documents, and other materials that contain information directly related to students and that are maintained by an educational institution or an authority on behalf of the institution.

The term “educational record,” under the provision of the act, does not include the following:

1. Records of institutional, supervisory, and administrative personnel that are in the sole possession of the maker and that are not accessible or revealed to any other person except a substitute for the above named personnel.
2. Records and documents of security officers of the institution that are kept apart from such educational records.
3. Records on students that are made or maintained by a physician, psychiatrist, psychologist, counselor, or other recognized professionals or paraprofessionals acting in their official capacity and that are made, maintained, or used only in connection with a provision for treatment of the student and not available to anyone other than persons providing such treatment, except that such records can be personally reviewed by a physician or other appropriate professional of a given student’s choice.
4. Alumni or former student records.

Students may not review or inspect:

1. Financial records of the parents of the students or other information therein contained.
2. Confidential recommendations if a given student has signed a waiver of the student’s rights of access, provided that such a waiver may not be required of the student.

**CONTROL PROVISIONS ON STUDENT RECORDS AND STUDENT INFORMATION**

The official student file shall not be sent outside the Admissions Office, Enrollment and Records Services Division, Financial Aid Office, Placement Office, or Cooperative Education Office except in circumstances
specifically authorized in writing by the President or appropriate vice president.

Students have the right to inspect their own records covered by the Act whether recorded in hard copy, electronic data processing media, or microfilm. The Registrar has been designated by the College to coordinate the Inspection and Review Procedures for Student Education Records. Requests to review records must be made in writing, specifying the item or items of interest. Records will be made available for review within forty-five (45) days. Upon inspection, students are entitled to an explanation of any information contained in the record.

Students may have copies of their records except:
1. When a financial “hold” exists.
2. When the copy requested is a transcript of an original or source document that exists elsewhere.
A fee of $.50 per page will be charged for copies of records other than the student’s transcript(s) of academic records.

Transcripts and other information, except as provided by the Act, are released only with the written consent of the student. Such written consent must:
1. Specify the records or the data to be released, to whom it is to be released, and the reason(s) for release.
2. Be signed and dated by the student.

DISCLOSURE OF INFORMATION WITHOUT THE STUDENT’S CONSENT
Educational records will be disclosed without written consent of students to properly identified and authorized representatives of the Comptroller General of the United States; the Secretary of Education; state educational officials; and the Department of Veterans Affairs, for audit and evaluation of federal and state-supported programs, or in connection with enforcement of the federal or legal requirements that relate to such programs. Routine requests for student data from agencies such as the Department of Education, OEO, research agencies, and state-reporting agencies may be honored without prior approval of the student only in formats where students are not identified.

Confidential information requested by other than federal or state agencies as specified above will be released only under the following conditions:
1. An official order of a court of competent jurisdiction.
2. Subpoena. (Students will be notified immediately by registered mail that their records are being subpoenaed.)
3. To parents of students upon the parent providing a certified copy of the parent’s most recent Federal Income Tax Form in which the student is identified as a dependent.
4. To an appropriate vice president.

Requests for confidential information will be honored without prior consent of the student in connection with an emergency, if the knowledge of such information by appropriate persons is necessary (in view of a responsible person) to protect the health or safety of the student or other persons.

Faculty and administrative officers of the College who demonstrate a legitimate educational need will be permitted to look at the official student record for a particular student.

The College may make the following “Directory Information” available to the public unless the student notifies the Registrar in writing by the end of the first week of the term that such information is not to be made available.
1. Student’s name
2. Date of birth
3. Email address
4. Major field of study or program
5. Dates of enrollment
6. Degrees, Diplomas, or Certificates received
7. College honors
Any release of student information for public use or use by the media except that specified above must have prior written approval by the student(s) involved.

RECORD OF WHO HAS ACCESS
A record of access to the official student record will be maintained within the record itself. This record will show the name, address, date, and purpose of the person who has been granted access. All persons who have access will be included in this record except those institutional employees who, because of the nature of their duties, have been granted access.

STUDENT’S RIGHTS TO QUESTION CONTENTS OF OFFICIAL RECORDS
A student has the right to view his official records maintained by the College. Furthermore, a student may question any inaccurate or misleading information and request correction or deletion of that data from the official records.

All such requests will be sent to the Registrar and will become a part of that student’s record.

All requests for correction of a student record will be acted upon within 45 days of receipt of that request. If the custodian can verify that such data is, in fact, in error, appropriate corrections will be made and the student will be notified in writing when the correction has been completed. In the event the Registrar fails to resolve the student’s requests to the student’s satisfaction, the student may continue the grievance through compliance with the grievance procedure contained in this Handbook. If the outcome of the grievance is in agreement with the student’s request, the student will be permitted to review his record to verify that the change has been made correctly. If the student’s request is denied, he will be permitted to append a statement to the record in question, showing the basis for his disagreement with the denial. Such appendages will become a permanent part of the record.
Degrees, Diplomas, & Certificates

Wake Technical Community College awards numerous degree, diploma, and certificate programs in a variety of fields.

Website: http://curred.waketech.edu/

Coding

Example: D Automotive Systems Technology A60160
D = This class is only offered in the day.

Program is offered:
D = Day
E = Evening
B = Both Day & Evening
* = Distance Education
A = All the above
† = Not open to new students

Applied Technologies ........................................... 62
Business Technologies ....................................... 72
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Computer and Engineering Technologies ........ 87
General Education ........................................... 110
Health Sciences .................................................. 111
Course Descriptions...........................................119

Degrees

COLLEGE/UNIVERSITY TRANSFER

The College/University Transfer program is designed for the person who wishes to transfer to a four-year institution. The program offers three degrees, the Associate in Arts, the Associate in Science, and the Associate in Science – Pre-Major: Engineering. By enrolling in this program, the student may complete course work equivalent to the general education requirements for the bachelor’s degree at a senior institution.

The Associate in Arts or the Associate in Science is awarded upon successful completion of 64 hours, including the minimum in each of the areas indicated on the curriculum outline.

A A.A. = Associate in Arts - A10100
B A.S. = Associate in Science – A10400
B A.S. = Associate in Science – Pre-Major: Engineering A1040D

GENERAL EDUCATION

The General Education curriculum is designed for individuals who wish to broaden their education, with emphasis on personal growth, intellectual enrichment, and improvement in general knowledge. The curriculum provides an introduction to the liberal arts (general education) in a program that can be tailored to the student’s personal interests rather than to specific technical or professional requirements.

The Associate in General Education is awarded upon completion of 64 hours, including the minimum in each of the areas on the curriculum outline.

B A.G.E. = Associate in General Education

ASSOCIATE IN APPLIED SCIENCE

A.A.S. = Associate in Applied Science

Applied Technologies ........................................... 62
D Air Conditioning, Heating and Refrigeration Technology A35100
D Automotive Systems Technology A60160
D Construction Management Technology A35190
D Cosmetology A55140
D Electrical/Electronics Technology A35220
D Heavy Equipment and Transport Technology A60240
D Heavy Equipment and Transport Technology/ Agricultural Systems A6024A
D Heavy Equipment and Transport Technology/ Construction Equipment Systems A6024B
D Mechanical Drafting Technology A50340

Business Technologies

B Accounting A25100
B Business Administration A25120
B Business Administration/Human Resources Management A2512C
A Criminal Justice Technology A55180
D Criminal Justice Technology/Latent Evidence A5518A
D Culinary Technology A55200
B Early Childhood Associate A55220
D Hotel and Restaurant Management A25240
D Medical Office Administration A25310
D* Office Systems Technology A25360
D Office Systems Technology/Legal A2636A

Computer and Engineering Technologies

B Advertising and Graphic Design A30100
D Architectural Technology A40100
D BioPharmaceutical Technology A20180
B Civil Engineering Technology A40140
B Computer Engineering Technology A40160
B Computer Information Technology A25260
AREAS OF STUDY

Computer Programming A25130
Database Management A25150
Electronics Engineering Technology A40200
Environmental Science Technology A20140
Industrial Engineering Technology A40240
Information Systems Security A25270
Landscape Architecture Technology A40260
Mechanical Engineering Technology A40320
Networking Technology A25340
Pre-Engineering A1040D
Simulation and Game Development A25450
Surveying Technology A40380
* Web Technologies A25290

Health Sciences
Associate Degree Nursing A45120
Dental Hygiene A45260
Emergency Medical Science A45340
General Occupational Technology A55280
Human Services Technology A45380
Human Services Technology/Developmental Disabilities A4538A
Human Services Technology/Substance Abuse A4538E
Medical Assisting A45400
Medical Laboratory Technology A45420
Radiography A45700

Collaborative Agreements

Court Reporting and Captioning A25140
Collaborative with Lenoir Community College
Electric Lineman Technology A35210
Collaborative with Nash Community College
Global Logistics Technology A25170
Collaborative with Lenoir Community College

Diplomas

Applied Technologies
Air Conditioning, Heating, and Refrigeration Technology D35100A
Electrical/Electronics Technology D35220A
Heavy Equipment and Transport Technology/Construction Equipment Systems D6024BA
Heavy Equipment and Transport Technology/Hydraulics, Engines, and Transmissions D6024BB
Mechanical Drafting Technology C50340B
Plumbing Applications and Diagrams C35400A
Welding Technology C50420B

Business Technologies
Accounting: Payroll Accounting Clerk C25100A
Accounting: Income Tax Preparer C25100B
Business Administration: Customer Service C25120A
Business Administration: Entrepreneurship C25120C
Business Administration: Sales Development C25120A
Business Administration/Human Resources Management C2512CA
Culinary Technology C55200A
Culinary Technology: Baking C55200B
Early Childhood Associate: Infant/Toddler Care C55220C
Food Service Technology (Prison Only) C55250
Hotel and Restaurant Management: Hotel Management C25240A
Hotel and Restaurant Management: Restaurant Management C25240B
Medical Office Administration: Medical Office Specialist C25310A
Medical Office Administration: Medical Billing and Coding C25310B
Medical Office Administration: Medical Transcription Specialist C25310C
Office Systems Technology: Word Processing & Publications C25360E
Office Systems Technology: Office Specialist C25360F
Real Estate Appraisal C25420
Real Estate Licensing C25480

Health Sciences
Computed Tomography and Magnetic Resonance Imaging Technology D45200
Dental Assisting D45240
Medical Assisting D45400
Pharmacy Technology D45580

Collaborative Agreements

Interventional Cardiac & Vascular Technology D45410
Collaborative with Johnston, Edgecombe, and Fayetteville Community Colleges

Certificates

Applied Technologies
Air Conditioning, Heating, and Refrigeration C35100B
Basic Law Enforcement Training C55120
Construction Management Technology C35190B
Electrical/Electronics Technology: Commercial Wiring Methods C35220C
Electrical/Electronics Technology: Residential Wiring Methods C35220B
Heavy Equipment and Transport Technology/Construction Equipment Systems: Fuel Injection, Electrical, and Electronics C6024BC
Heavy Equipment and Transport Technology/Construction Equipment Systems: Hydraulics, Engines, and Transmissions C6024BB
Machining Technology C50300B
Mechanical Drafting Technology C55300A
Plumbing: Modern Plumbing Codes and Blueprint Reading C35300B

Business Technologies
Accounting: Payroll Accounting Clerk C25100A
Accounting: Income Tax Preparer C25100B
Business Administration: Customer Service C25120B
Business Administration: E-Commerce C25120A
Business Administration: Entrepreneurship C25120C
Business Administration: Sales Development C25120A
Business Administration/Human Resources Management C2512CA

Diplomas

Air Conditioning, Heating, and Refrigeration Technology D35100A
Electrical/Electronics Technology D35220A
Heavy Equipment and Transport Technology/Construction Equipment Systems D6024BA
Mechanical Drafting Technology D50340A
Plumbing D35300
Welding Technology D50420A

Business Technologies
Early Childhood Associate D55220A
Food Service Technology (Prison Only) D55250
Office Systems Technology D25360A

College/University Transfer
Transfer Core Diploma (Arts) D10100
Transfer Core Diploma (Science) D10400

Computer and Engineering Technologies
Simulation and Game Development D25450A
Simulation and Game Development: Modeling and Design D25450B

Health Sciences
Computed Tomography and Magnetic Resonance Imaging Technology D45200
Dental Assisting D45240
Medical Assisting D45400
Pharmacy Technology D45580

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## Computer and Engineering Technologies

* Advertising and Graphic Design: Graphics and Design C30100A
* Advertising and Graphic Design: Web and Graphic Design C30100B
A Advertising and Graphic Design: Digital Media C30100C
B Architectural Technology: Architectural CAD C40100A
B Civil Engineering Technology: Civil Design C40140A
B Computer Engineering Technology: C-Programming – Open Source Development C40160B
B Computer Information Technology: Computer Forensics C25260U
B Computer Information Technology: Hardware Troubleshooting C25260G
B Computer Information Technology: IT Support Management C25260L
A Computer Information Technology: IT Foundations C25260M
B Computer Information Technology: IT Support Technician C25260K
A Computer Information Technology: MCAS. C25260A
A Computer Information Technology: Spreadsheet Specialist C25260E
A Computer Programming: C++ Programming C25130C
A Computer Programming: Computer Science C25130E
A Computer Programming: JAVA Programming C25130C
A Computer Programming: Visual BASIC Programming C25130B
A Computer Programming: Visual C# Programming C25130D
A Database Management: MySQL Developer C25150C
A Database Management: Oracle DBA Programming C25150B
A Database Management: Oracle Developer C25150A
B Electronics Engineering Technology: Basic Electronics C40200A
B Electronics Engineering Technology: PLC Programming C40200B
B Electronics Engineering Technology: Robotics C40200C
B High Performance Computing: Bioinformatics Computing C25230B
A High Performance Computing: Linux/Red Hat Administration C25230C
A Industrial Engineering Technology: Advanced Quality C40240C
A Industrial Engineering Technology: Industrial Management C40240A
A Industrial Engineering Technology: Manufacturing Process Control C40240D
A Industrial Engineering Technology: Quality Assurance C40240B
B Information Systems Security: Network Security Admin. C25270A
D Landscape Architecture Technology: Landscape Architecture C40260A
A Mechanical Engineering Technology: Mechanical Design C40320B
A Mechanical Engineering Technology: Thermal Mechanics C40320C
A Mechanical Engineering Technology: Materials Engineering C40320D
A Mechanical Engineering Technology: Engineering Management C40320E
A Mechanical Engineering Technology: Engineering Fundamentals C40320F
B Networking Technology: Cisco Certified Network Associate (CCNA) C25340C
B Networking Technology: Cisco Certified Network Professional (CCNP) C25340I
A Networking Technology: Microsoft Certified Systems Administrator (MCSA) C25340J
B Simulation and Game Development: Modeling and Animation C25450A
B Simulation and Game Development: Production C25450B
* Web Technologies: E-Commerce Programming C25290B
* Web Technologies: Web Designer C25290C
* Web Technologies: Web Developer C25290A

### Health Sciences

D Computed Tomography Technology C45200A
B Human Services Technology C45380
B Human Services Technology: Developmental Disabilities C4538A
B Human Services Technology: Substance Abuse C4538E
D Magnetic Resonance Imaging Technology C45200B
D Phlebotomy C45600

### Collaborative Agreements

GIS/GPS – Geographic Information Science – C40220-C1 Collaborative with Central Piedmont Community College

Simulation and Game Development: – Level III Instruction Service Agreement with Pitt Community College, Nash Community College, Surry Community College, Wayne Community College, and Fayetteville Technical Community College.

### Special Notes

Students should contact their advisors for updates to program offerings. Students admitted to programs that require a clinical or co-op component may be required to provide the college with an official criminal background check in order to meet the requirements of the clinical or co-op site. Convictions for certain crimes and/or evidence of drug use may disqualify students for participating in clinical or co-op experiences, which would limit their progress toward graduation.

Changes may have been made since the printing of the catalog. Students should be in contact with their advisors for updates. Selected Topics and Seminar courses are designed to provide students the opportunity to explore areas of current interest appropriate to the discipline. Course content varies and may include an introduction to emerging technologies, advanced topics, preparation for an appropriate certification examination and may require appropriate pre- and corequisites.
Applied Technologies

Dean Sammie Thornton
Phone: 919-866-5170
Email: scthornton@waketech.edu

DEGREES
Air Conditioning, Heating and Refrigeration Technology
Automotive Systems Technology
Construction Management Technology
Cosmetology
Electrical/Electronics Technology
Heavy Equipment and Transport Technology
Heavy Equipment and Transport Technology/ Agricultural Systems
Heavy Equipment and Transport Technology/ Construction Equipment Systems
Mechanical Drafting Technology

DIPLOMAS
Air Conditioning, Heating, and Refrigeration Technology
Electrical/Electronics Technology
Heavy Equipment and Transport Technology/ Construction Equipment Systems
Mechanical Drafting Technology
Plumbing
Welding Technology

CERTIFICATES
Air Conditioning, Heating, and Refrigeration Basic Law Enforcement Training
Construction Management Technology
Electrical/Electronics Technology: Commercial Wiring Methods
Electrical/Electronics Technology: Residential Wiring Methods
Heavy Equipment and Transport Technology/ Construction Equipment Systems: Fuel Injection, Electrical, and Electronics
Heavy Equipment and Transport Technology/ Construction Equipment Systems: Hydraulics, Engines, and Transmissions
Machining Technology
Mechanical Drafting Technology
Plumbing Applications and Diagrams

COLLABORATIVE AGREEMENTS
Electric Lineman Technology A35210
Collaborative with Nash Community College

Plumbing: Modern Plumbing Codes and Blueprint Reading
Welding Technology
Air Conditioning, Heating, And Refrigeration Technology

The Air Conditioning, Heating, and Refrigeration Technology curriculum provides the basic knowledge to develop skills necessary to work with residential and light commercial systems. Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety.

AAS degree graduates should be able to assist in the start up, preventive maintenance, service, repair, and/or installation of residential and light commercial systems and, should be able to demonstrate an understanding of system selection and balance and advanced systems.

AIR CONDITIONING, HEATING, AND REFRIGERATION TECHNOLOGY — A35100

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>ENG 110</td>
<td>Freshman Composition</td>
<td>3</td>
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<tr>
<td>COM 120</td>
<td>Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>HUM 121</td>
<td>The Nature of America</td>
<td>3</td>
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<tr>
<td>PHY 121</td>
<td>Applied Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
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</table>

Major Courses

<table>
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<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHR 110</td>
<td>Introduction to Refrigeration</td>
<td>5</td>
</tr>
<tr>
<td>AHR 111</td>
<td>HVACR Electricity</td>
<td>3</td>
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<tr>
<td>AHR 112</td>
<td>Heating Technology</td>
<td>4</td>
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<tr>
<td>AHR 113</td>
<td>Comfort Cooling</td>
<td>4</td>
</tr>
<tr>
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<td>Heat Pump Technology</td>
<td>4</td>
</tr>
<tr>
<td>AHR 115</td>
<td>Refrigeration Systems</td>
<td>2</td>
</tr>
<tr>
<td>AHR 130</td>
<td>HVAC Controls</td>
<td>3</td>
</tr>
<tr>
<td>AHR 133</td>
<td>HVAC Servicing</td>
<td>4</td>
</tr>
<tr>
<td>AHR 151</td>
<td>HVAC Duct Systems I</td>
<td>2</td>
</tr>
<tr>
<td>AHR 160</td>
<td>Refrigerant Certification</td>
<td>1</td>
</tr>
<tr>
<td>AHR 180</td>
<td>HVAC Customer Relations</td>
<td>1</td>
</tr>
<tr>
<td>AHR 210</td>
<td>Residential Building Code</td>
<td>2</td>
</tr>
<tr>
<td>AHR 211</td>
<td>Residential System Design</td>
<td>3</td>
</tr>
<tr>
<td>AHR 212</td>
<td>Advanced Comfort Systems</td>
<td>4</td>
</tr>
<tr>
<td>AHR 215</td>
<td>Commercial HVAC Controls</td>
<td>2</td>
</tr>
<tr>
<td>AHR 225</td>
<td>Commercial System Design</td>
<td>3</td>
</tr>
<tr>
<td>AHR 240</td>
<td>Hydronic Heating</td>
<td>2</td>
</tr>
<tr>
<td>AHR 245</td>
<td>Chiller Systems</td>
<td>2</td>
</tr>
<tr>
<td>AHR 250</td>
<td>HVAC System Diagnostics</td>
<td>2</td>
</tr>
<tr>
<td>AHR 263</td>
<td>Energy Management</td>
<td>2</td>
</tr>
<tr>
<td>WLD 112</td>
<td>Basic Welding Processes</td>
<td>2</td>
</tr>
</tbody>
</table>

Graduation Requirements..................................................73 Credit Hours

AIR CONDITIONING, HEATING, AND REFRIGERATION TECHNOLOGY — C35100B

Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety. The certificate program covers air conditioning, furnaces, tools, and instruments. Certificate graduates should be able to assist in the start up, preventive maintenance, service, repair, and/or installation of residential systems.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AHR 111</td>
<td>HVACR Electricity</td>
<td>3</td>
</tr>
<tr>
<td>AHR 112</td>
<td>Heating Technology</td>
<td>4</td>
</tr>
<tr>
<td>AHR 113</td>
<td>Comfort Cooling</td>
<td>4</td>
</tr>
<tr>
<td>AHR 130</td>
<td>HVAC Controls</td>
<td>3</td>
</tr>
<tr>
<td>AHR 133</td>
<td>HVAC Servicing</td>
<td>4</td>
</tr>
</tbody>
</table>

Completion Requirements..................................................18 Credit Hours

AIR CONDITIONING, HEATING, AND REFRIGERATION TECHNOLOGY — D35100A

Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety. The diploma program covers air conditioning, furnaces, heat pumps, tools and instruments. Diploma graduates should be able to assist in the start up, preventive maintenance, service, repair, and/or installation of residential and light commercial systems. AAS degree graduates should be able to demonstrate an understanding of system selection and balance and advanced systems.
Automotive Systems Technology

The Automotive Systems Technology curriculum prepares individuals for employment as automotive service technicians. It provides an introduction to automotive careers and increases student awareness of the challenges associated with this fast and ever-changing field.

Classroom and lab experiences integrate technical and academic coursework. Emphasis is placed on theory, servicing and operation of brakes, electrical/electronic systems, engine performance, steering/suspension, automatic transmission/transaxles, engine repair, climate control, and manual drive trains.

Upon completion of this curriculum, students should be prepared to take the ASE exam and be ready for full-time employment in dealerships and repair shops in the automotive service industry.

AUTOMOTIVE SYSTEMS TECHNOLOGY — A60160

General Education Courses

- COM 120 Interpersonal Communication .......................... 3
- ENG 110 Freshman Composition .................................. 3
- HUM 121 The Nature of America .................................. 3
- PHY 121 Applied Physics I ........................................... 4
- PSY 118 Interpersonal Psychology .................................. 3

Major Courses

- AUT 116 Engine Repair ............................................. 3
- AUT 123 Powertrain Diagn & Serv .................................. 2
- AUT 141 Suspension & Steering Sys .............................. 3
- AUT 141A Suspension & Steering Lab ............................ 1
- AUT 151 Brake Systems .............................................. 3
- AUT 151A Brake Systems Lab ....................................... 1
- AUT 161 Basic Auto Electricity ..................................... 5
- AUT 163 Adv Auto Electricity ....................................... 3
- AUT 163A Adv Auto Electricity Lab ............................... 1
- AUT 171 Auto Climate Control ..................................... 4
- AUT 181 Engine Performance 1 .................................... 3
- AUT 183 Engine Performance 2 ..................................... 4
- AUT 213 Automotive Servicing 2 ................................. 2
- AUT 221 Auto Transm/Transaxles .................................. 3
- AUT 221A Auto Transm/Transax Lab ............................. 1
- AUT 231 Man Trans/Axes/Drtrains ................................ 3
- AUT 231A Man Trans/Ax/Drtrains Lab ........................... 1
- AUT 281 Adv Engine Performance ................................ 3

Major Electives

Select 2 hours from the following courses

- AUT 114 Safety and Emissions .................................... 2
- COE 111 Co-op Work Experience I .............................. 1
- COE 112 Co-op Work Experience II ............................. 2
- COE 121 Co-op Work Experience II ............................. 2

Graduation Requirements ............................................. 65 Credit Hours

Basic Law Enforcement Training

Basic Law Enforcement Training (BLET) is designed to give students essential skills required for entry-level employment as law enforcement officers with state, county, or municipal governments, or with private enterprise.

This program utilizes State commission-mandated topics and methods of instruction. General subjects include, but are not limited to, criminal, juvenile, civil, traffic, and alcoholic beverage laws; investigative, patrol, custody, and court procedures; emergency responses; and ethics and community relations.

Students must successfully complete and pass all units of study that include the certification examination mandated by the North Carolina Criminal Justice Education and Training Standards Commission and the North Carolina Sheriffs' Education and Training Standards Commission to receive a certificate.

BASIC LAW ENFORCEMENT TRAINING — C55120

Completion Requirements ................................................ 19 Credit Hours

Construction Management Technology

The Construction Management Technology curriculum is designed to provide training for persons interested in project management and other related positions in the construction industry.

Coursework focuses on such topics as construction materials, methods and techniques of modern construction, building codes, contractor licensing law, contractor business law, OSHA and safety on the construction site, project management, project scheduling, project costs and productivity, residential and commercial estimating, residential and commercial blueprint reading, and human relations issues in the construction industry.

Graduates should qualify for entry-level positions as project manager assistants, site superintendents, construction foremen, building inspectors, estimators, and other construction management-related jobs.

CONSTRUCTION MANAGEMENT TECHNOLOGY — A35190

General Education Courses

- COM 120 Intro Interpersonal Com ................................. 3
- ENG 110 Freshman Composition .................................. 3
- HUM 121 The Nature of America .................................. 3
- PHY 121 Applied Physics I ........................................... 4
- PSY 118 Interpersonal Psychology .................................. 3

Major Courses

- ACC 111 Financial Accounting ................................. 3
- BPR 130 Blueprint Reading/Const ................................. 2
- BPR 230 Commercial Blueprints ................................ 2
- CIS 111 Basic PC Literacy .......................................... 2
- CMT 112 Construction Mgt I ................................. 6
- CMT 114 Construction Mgt II ..................................... 6
Cosmetology

The Cosmetology curriculum is designed to provide competency-based knowledge, scientific/artistic principles, and hands-on fundamentals associated with the cosmetology industry. The curriculum provides a simulated salon environment which enables students to develop manipulative skills.

Course work includes instruction in all phases of professional imaging, hair design, chemical processes, skin care, nail care, multicultural practices, business/computer principles, product knowledge, and other selected topics.

Graduates should qualify to sit for the State Board of Cosmetic Arts examination. Upon successfully passing the State Board exam, graduates will be issued a license. Employment is available in beauty salons and related businesses.

Please Note: Plans are for the Cosmetology curriculum to begin fall semester 2008. The facility which will be used for the Cosmetology Laboratories is currently in the construction phase. Students will be able to register and take their general education required courses but will not be able to take any Cosmetology courses until the Laboratories facility is completed. The projected completion time for the Laboratories facility is August 2009. Please check the Wake Tech online catalog for the latest details on the opening of the Cosmetology Laboratories facility.

Electrical/Electronics Technology

The Electrical/Electronics Technology curriculum is designed to provide training for persons interested in the installation and maintenance of electrical/electronic systems found in residential, commercial, and industrial facilities.

Training, most of which is hands-on, will include such topics as AC/DC theory, basic wiring practices, digital electronics, programmable logic controllers, industrial motor controls, the National Electrical Code, and other subjects as local needs require.

Graduates should qualify for a variety of jobs in the electrical/electronic field as an on-the-job trainee or apprentice assisting in the layout, installation, and maintenance of electrical/electronic systems.

Electrical/Electronics Technology — A35220

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM 120</td>
<td>Interpersonal Communications</td>
<td>3</td>
</tr>
<tr>
<td>ENG 110</td>
<td>Freshman Composition</td>
<td>3</td>
</tr>
<tr>
<td>HUM 121</td>
<td>The Nature of America</td>
<td>3</td>
</tr>
<tr>
<td>PHY 111</td>
<td>Applied Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Courses

Select 3 hours from the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELC 111</td>
<td>Basic PC Literacy</td>
<td>2</td>
</tr>
<tr>
<td>ELC 112</td>
<td>DC/AC Electricity</td>
<td>5</td>
</tr>
<tr>
<td>ELC 113</td>
<td>Basic Wiring I</td>
<td>4</td>
</tr>
<tr>
<td>ELC 114</td>
<td>Basic Wiring II</td>
<td>4</td>
</tr>
<tr>
<td>ELC 115</td>
<td>Industrial Wiring</td>
<td>4</td>
</tr>
<tr>
<td>ELC 117</td>
<td>Motors and Controls</td>
<td>4</td>
</tr>
<tr>
<td>ELC 118</td>
<td>National Electrical Code</td>
<td>2</td>
</tr>
<tr>
<td>ELC 119</td>
<td>NEC Calculations</td>
<td>2</td>
</tr>
<tr>
<td>ELC 121</td>
<td>Electrical Estimating</td>
<td>2</td>
</tr>
<tr>
<td>ELC 126</td>
<td>Electrical Computations</td>
<td>3</td>
</tr>
<tr>
<td>ELC 128</td>
<td>Introduction to PLC</td>
<td>3</td>
</tr>
<tr>
<td>ELC 134</td>
<td>Transformer Applications</td>
<td>2</td>
</tr>
<tr>
<td>ELN 133</td>
<td>Digital Electronics</td>
<td>4</td>
</tr>
<tr>
<td>ELN 229</td>
<td>Industrial Electronics</td>
<td>4</td>
</tr>
<tr>
<td>HYD 110</td>
<td>Hydraulics/Pneumatics I</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Electives

Select 2 hours from the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COE 111</td>
<td>Co-op Work Experience I</td>
<td>1</td>
</tr>
<tr>
<td>COE 112</td>
<td>Co-op Work Experience II</td>
<td>2</td>
</tr>
<tr>
<td>COE 121</td>
<td>Co-op Work Experience I</td>
<td>1</td>
</tr>
<tr>
<td>ELC 229</td>
<td>Applications Project</td>
<td>2</td>
</tr>
</tbody>
</table>

Graduation Requirements .......................... 17 Credit Hours

Electrical/Electronics Technology — D35220A

The Electrical/Electronics Technology curriculum is designed to provide training for persons interested in the installation and maintenance of electrical/electronic systems found in residential, commercial, and industrial facilities.

Training, most of which is hands-on, will include such topics as AC/DC theory, basic wiring practices, digital electronics, programmable logic controllers, industrial motor controls, the National Electrical Code, and other subjects as local needs require.

Major Courses

Select 3 hours from the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 111</td>
<td>Basic PC Literacy</td>
<td>2</td>
</tr>
<tr>
<td>ELC 112</td>
<td>DC/AC Electricity</td>
<td>5</td>
</tr>
<tr>
<td>ELC 113</td>
<td>Basic Wiring I</td>
<td>4</td>
</tr>
<tr>
<td>ELC 114</td>
<td>Basic Wiring II</td>
<td>4</td>
</tr>
<tr>
<td>ELC 115</td>
<td>Industrial Wiring</td>
<td>4</td>
</tr>
<tr>
<td>ELC 117</td>
<td>Motors and Controls</td>
<td>4</td>
</tr>
<tr>
<td>ELC 118</td>
<td>National Electrical Code</td>
<td>2</td>
</tr>
<tr>
<td>ELC 119</td>
<td>NEC Calculations</td>
<td>2</td>
</tr>
<tr>
<td>ELC 121</td>
<td>Electrical Estimating</td>
<td>2</td>
</tr>
<tr>
<td>ELC 126</td>
<td>Electrical Computations</td>
<td>3</td>
</tr>
<tr>
<td>ELC 128</td>
<td>Introduction to PLC</td>
<td>3</td>
</tr>
<tr>
<td>ELC 134</td>
<td>Transformer Applications</td>
<td>2</td>
</tr>
<tr>
<td>ELN 133</td>
<td>Digital Electronics</td>
<td>4</td>
</tr>
<tr>
<td>ELN 229</td>
<td>Industrial Electronics</td>
<td>4</td>
</tr>
<tr>
<td>HYD 110</td>
<td>Hydraulics/Pneumatics I</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Electives

Select 2 hours from the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COE 111</td>
<td>Co-op Work Experience I</td>
<td>1</td>
</tr>
<tr>
<td>COE 112</td>
<td>Co-op Work Experience II</td>
<td>2</td>
</tr>
<tr>
<td>COE 121</td>
<td>Co-op Work Experience I</td>
<td>1</td>
</tr>
<tr>
<td>ELC 229</td>
<td>Applications Project</td>
<td>2</td>
</tr>
</tbody>
</table>

Graduation Requirements .......................... 66 Credit Hours
Diploma graduates should qualify for a variety of jobs in the electrical/electronics field as an on-the-job trainee or apprentice assisting in the layout, installation, and maintenance of electrical/electronic systems.

**General Education Courses**
- ENG 110 Freshman Composition ........................................... 3
- PSY 118 Interpersonal Psychology ........................................ 3

**Major Courses**
- ELC 112 DC/AC Electricity .................................................. 5
- ELC 114 Basic Wiring I .......................................................... 2
- ELC 115 Industrial Wiring .................................................... 4
- ELC 117 Motors and Controls ............................................... 4
- ELC 118 National Electrical Code ......................................... 2
- ELC 119 NEC Calculations ................................................... 2
- ELC 126 Electrical Computations .......................................... 3
- ELC 128 Introduction to PLC ............................................... 3
- ELC 134 Transformer Applications ....................................... 2

**Graduation Requirements** .............................................. 43 Credit Hours

**Electrical/Electronics Technology**

**Commercial Wiring Methods**

The Commercial Wiring Methods Certificate is a continuation of the Residential Wiring Methods certificate and is designed to provide training for persons interested in the installation and maintenance of electrical systems found in commercial facilities.

Training, most of which is hands-on, will include such topics as basic commercial wiring practices, motors and controls, the National Electrical Code, and other subjects as local needs require.

Graduates should qualify for a variety of jobs in the electrical field as an on-the-job trainee or apprentice assisting in the layout, installation, and maintenance of commercial electrical systems.

**NOTE:** Residential Wiring Methods certificate must be completed before enrolling in the Commercial Wiring Methods program.

**ELECTRICAL/ELECTRONICS TECHNOLOGY: COMMERCIAL WIRING METHODS — C35220C**

- ELC 114a Basic Wiring II-Part 1 ............................................. 2
- ELC 114b Basic Wiring II-Part 2 ............................................. 2
- ELC 117a Motors and Controls-Part 1 ..................................... 2
- ELC 117b Motors and Controls-Part 2 ..................................... 2
- ELC 119 NEC Calculations ................................................... 2
- ELC 134 Transformer Applications ....................................... 2

**Completion Requirements** .............................................. 12 Credit Hours

**Residential Wiring Methods**

The Residential Wiring Methods Certificate is designed to provide training for persons interested in the installation and maintenance of electrical systems found in residential facilities.

Training, most of which is hands-on, will include such topics as AC/DC theory, basic residential wiring practices, the National Electrical Code, and other subjects as local needs require.

Graduates should qualify for a variety of jobs in the electrical field as an on-the-job trainee or apprentice assisting in the layout, installation, and maintenance of residential electrical systems.

**ELECTRICAL/ELECTRONICS TECHNOLOGY: RESIDENTIAL WIRING METHODS — C35220B**

- ELC 112a DC/AC Electricity-Part 1 ........................................ 3
- ELC 113a Basic Wiring I-Part 1 ............................................. 2
- ELC 113b Basic Wiring I-Part 2 ............................................. 2
- ELC 118 National Electrical Code ......................................... 2
- ELC 126a Electrical Computations-Part 1 ................................ 2
- ELC 126b Electrical Computations-Part 2 ................................ 1

**Completion Requirements** .............................................. 14 Credit Hours

**Heavy Equipment & Transport Technology**

The Heavy Equipment and Transport Technology curriculum is designed to provide individuals with the knowledge and skills needed to troubleshoot and repair medium- and heavy-duty vehicles.

The core course work includes the theory of operations, troubleshooting techniques, and repair procedures for engines, electrical, and hydraulic systems. Other courses cover transmissions, brakes, and steering/suspension. Additional related courses will be required.

Graduates of the curriculum should qualify for entry-level employment opportunities at businesses that repair medium- and heavy-duty vehicles. Entry and advancement levels depend on the amount of training completed, knowledge and ability levels, work performance, and ethics.

**HEAVY EQUIPMENT AND TRANSPORT TECHNOLOGY — A60240**

**General Education Courses**
- COM 120 Interpersonal Communication .................................. 3
- ENG 110 Freshman Composition ........................................... 3
- HUM 121 The Nature of America .......................................... 3
- PHY 121 Applied Physics I .................................................. 4
- PSY 118 Interpersonal Psychology ........................................ 3

**Major Courses**
- ELC 127 Software for Technicians ...................................... 2
- HET 110 Diesel Engines ..................................................... 6
- HET 112 Diesel Electrical Systems ....................................... 5
- HET 114 Power Trains ....................................................... 5
- HET 116 Air Conditioning/Diesel Equipment ......................... 2
- HET 120 Introduction to Mobile Equipment ......................... 2
- HET 134 Mechanical Fuel Injection ..................................... 3
- HET 231 Medium/Heavy Duty Brake System ......................... 2
- HET 232 Medium/Heavy Duty Brake System Lab .................... 1
- HET 233 Suspension and Steering ....................................... 4
- HYD 134 Hydraulic/Hydrostatic Construction ....................... 4
- MEC 111 Machine Processes I ............................................. 3
- PME 211 Advanced Equipment Repair ................................... 4
- PME 221 Construction Equipment Servicing ......................... 2
- WLD 112 Basic Welding Processes ...................................... 2

**Major Electives**

Select 5 hours from the following courses
- ELC 112 Diesel Electronics System .................................... 4
- ELC 113 Electronic Fuel Injection ........................................ 2
HET 115 Electronic Engines .................................................. 3
HET 120 Medium/Heavy Duty Tune-up .................................. 2
HET 132 Selected Topics in Heavy Equipment and Transport Technology ......................................... 2

Hydraulics Electives
Select one of the following courses
HYD 111 Mobile Hydraulic Systems ........................................ 3
HYD 112 Hydraulics/Medium/Heavy Duty .................................. 2

Co-op Electives
Select 2 hours from the following courses
COE 111 Co-op Work Experience I ............................................ 1

Graduation Requirements .................................................. 72 Credit Hours

Heavy Equipment & Transport Technology /
Agricultural Systems

Agricultural Systems is a concentration under the curriculum title of Heavy Equipment and Transport Technology. This curriculum is designed to provide individuals with the knowledge and skills needed to repair agricultural equipment.

The course work includes diesel engines, power trains, hydraulics, electrical systems, and fuel systems. Other topics include time management, inventory, and parts control.

Graduated of the curriculum should qualify for entry-level employment opportunities in a dealership as technicians qualified to be contributing members of the work team.

HEAVY EQUIPMENT AND TRANSPORT TECHNOLOGY/AGRICULTURAL SYSTEMS — A6024A

General Education Courses
COM 120 Intro Interpersonal Comm ........................................... 3
ENG 110 Freshman Composition ............................................... 3
HUM 121 The Nature of America .............................................. 3
PHY 121 Applied Physics I ...................................................... 4
PSY 118 Interpersonal Psychology .......................................... 3

Major Courses
ELC 127 Software for Technicians .......................................... 2
HET 110 Diesel Engines ....................................................... 6
HET 112 Diesel Electrical Systems ......................................... 6
HET 114 Power Trains ............................................................ 5
HET 116 Air Cond/Diesel Equip ............................................... 2
HET 120 Intro to Mobile Equipment ........................................ 2
HET 134 Mechanical Fuel Injection .......................................... 3
HET 211 Ag Harvesting Equipment .......................................... 4
HET 217 Tractor Performance ................................................ 2
HYD 134 Hyd/Hydrostatic Const .............................................. 4
PME 111 Planters and Sprayers ............................................... 4
PME 112 Consumer Products ................................................ 4
PME 121 Component Controls ............................................... 3
WLD 112 Basic Welding Processes ......................................... 2

Major Electives
Select 4 hours from the following courses
ELN 112 Diesel Electronics System .......................................... 4
ELN 113 Electronic Fuel Injection ............................................ 2
HET 115 Electronic Engines .................................................. 3
HET 128 Med/Heavy Duty Tune-up ........................................ 2

Hydraulics Electives
Select 2 hours from the following courses
HYD 111 Mobile Hydraulic Systems ........................................ 3
HYD 112 Hydraulics/Med/Heavy Duty ..................................... 2

Co-op Electives
Select 2 hours from the following courses
COE 111 Co-op Work Experience I ............................................ 1

COE 112 Co-op Work Experience I ........................................... 2
COE 121 Co-op Work Experience II ........................................ 1

Graduation Requirements .................................................. 72 Credit Hours

Heavy Equipment & Transport Technology/Construction Equipment Systems

Construction Equipment Systems is a concentration under the curriculum title of Heavy Equipment and Transport Technology. This curriculum is designed to provide individuals with the knowledge and skills needed to troubleshoot and repair construction equipment systems. Construction equipment includes dozers, scrapers, loaders, and forklifts.

The core course work includes the theory of operations, troubleshooting techniques, and repair procedures for engines and electrical and hydraulics systems. The concentration courses will include transmissions, brakes, undercarriage, and equipment repair. Other related courses will be required.

Graduates of the curriculum should qualify for entry-level employment opportunities at businesses that repair construction equipment. Entry and advancement levels depend on the amount of training completed, knowledge and ability levels, work performance, and ethics.

HEAVY EQUIPMENT AND TRANSPORT TECHNOLOGY/CONSTRUCTION EQUIPMENT SYSTEMS — A6024B

General Education Courses
COM 120 Interpersonal Communication .................................. 3
ENG 110 Freshman Composition ............................................. 3
HUM 121 The Nature of America ............................................. 3
PHY 121 Applied Physics I ..................................................... 4
PSY 118 Interpersonal Psychology ......................................... 3

Major Courses
ELC 127 Software for Technicians .......................................... 2
HET 110 Diesel Engines ....................................................... 6
HET 112 Diesel Electrical Systems ......................................... 5
HET 114 Power Trains ............................................................ 5
HET 116 Air Conditioning/Diesel Equipment ......................... 2
HET 134 Mechanical Fuel Injection .......................................... 3
HYD 134 Hydraulic/Hydrostatic Construction ......................... 4
MEC 111 Machine Processes I ............................................... 4
PME 113 Construction Equipment Repair ................................ 2
PME 117 Equipment Braking Systems ..................................... 3
PME 118 Undercarriage Components .................................... 2
PME 211 Advanced Equipment Repair ................................... 4
PME 221 Construction Equipment Servicing ......................... 2
WLD 112 Basic Welding Processes ......................................... 2

Major Electives
Select 6 hours from the following courses
ELN 112 Diesel Electronics System .......................................... 4
ELN 113 Electronic Fuel Injection ............................................ 2
HET 115 Electronic Engines .................................................. 3
HET 128 Medium/Heavy Duty Tune-up ................................... 2
HET 192 Selected Topics in Heavy Equipment and Transport Technology ......................................... 2

Hydraulics Electives
Select one of the following courses
HYD 111 Mobile Hydraulic Systems ........................................ 3
HYD 112 Hydraulics/Medium/Heavy Duty .................................. 2

Co-op Electives
Select 2 hours from the following courses
COE 111 Co-op Work Experience I ............................................ 1

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HEAVY EQUIPMENT AND TRANSPORT TECHNOLOGY/ CONSTRUCTION EQUIPMENT SYSTEMS — D6024BA

General Education Courses
ENG 110 Freshman Composition .............................................. 3
PHY 121 Applied Physics I ........................................................ 4

Major Courses
ECL 127 Software for Engineers ............................................. 2
HET 110 Diesel Engines ......................................................... 6
HET 112 Diesel Electrical Systems ........................................... 5
HET 114 Power Trains ............................................................ 5
HET 134 Mechanical Fuel Injection ......................................... 3
HET 143 Hydraulic/Hydrostatic Construction ......................... 4
PME 113 Construction Equipment Repair ................................. 2
PME 117 Equipment Braking Systems ........................................ 3
PME 118 Undercarriage Components ........................................ 2

Major Electives
Select 6 hours from the following courses
ELN 112 Diesel Electronics System ........................................... 4
ELN 113 Electronic Fuel Injection ............................................. 2
HET 115 Electronic Engines .................................................... 3
HET 128 Medium/Heavy Duty Tune-up .................................... 2
HET 192 Selected Topics in Heavy Equipment and Transport Technology ........................................... 2

Hydraulics Elective
Select one of the following courses
HYD 111 Mobile Hydraulic Systems ........................................ 3
HYD 112 Hydraulics/Medium/Heavy Duty .................................. 2

Graduation Requirements .................................................. 47 Credit Hours

Heavy Equipment & Transport Technology:
**Fuel Injection, Electrical, & Electronics**

The Fuel Injection, Electrical, and Electronics certificate curriculum is under Heavy Equipment and Transport Technology/ Construction Equipment Systems. This certificate curriculum is designed to provide individuals with the knowledge and skills needed to troubleshoot and repair fuel injection, electrical, and electronic systems in construction equipment. Construction equipment includes dozers, scrapers, loaders, and forklifts.

The core course work includes the theory of operations, troubleshooting techniques, and repair procedures for electrical and electronic systems. The concentration courses will also include fuel injection systems.

Graduates of the curriculum should qualify for entry-level employment opportunities at businesses, which repair construction equipment. Entry and advancement levels depend on the amount of training completed, knowledge and ability levels, work performance, and ethics.

HEAVY EQUIPMENT AND TRANSPORT TECHNOLOGY:
**HYDRAULICS, ENGINES, AND TRANSMISSIONS** — C6024BB

HET 110a Diesel Engines-Part 1 ............................................. 4
HET 110b Diesel Engines-Part 2 ............................................. 2
HET 114 Power Trains ............................................................ 5
HYD 111 Mobile Hydraulic Systems ........................................ 3
or
HYD 112 Hydraulic/Pneumatics II .......................................... 2

Completion Requirements.................................................... 13 Credit Hours

Heavy Equipment & Transport Technology:
**Hydraulics, Engines, And Transmissions**

The Hydraulics, Engines, and Transmissions certificate is under the Heavy Equipment and Transport Technology/ Construction Equipment Systems curriculum. This certificate is designed to provide individuals with the knowledge and skills needed to troubleshoot and repair hydraulics, engines, and transmissions in construction equipment.

The core course work includes the theory of operations, troubleshooting techniques, and repair procedures for engines and hydraulics systems. The concentration courses will also include transmissions.

Graduates of the curriculum should qualify for entry-level employment opportunities at businesses, which repair construction equipment. Entry and advancement levels depend on the amount of training completed, knowledge and ability levels, work performance, and ethics.
Machining Technology

The Machining Technology certificate is designed to develop basic skills in the theory and safe use of hand tools, power machinery, computerized equipment, and precision inspection instruments.

Students will learn to interpret blueprints, set up manual and CNC machines, perform basic machining operations, and make decisions to assure that work quality is maintained.

Employment opportunities exist in manufacturing industries, public institutions, governmental agencies, and in a wide range of specialty machining job shops.

**MACHINING TECHNOLOGY — C50300B**

- BPR 111 Blueprint Reading ...................................................... 2
- MAC 111a Machining Technology I-Part 1 ............................. 3
- MAC 111b Machining Technology I-Part 2 ............................. 3
- MAC 121 Introduction to CNC .............................................. 2
- MAC 151 Machining Calculations ............................................ 2
- MAC 229 CNC Programming .................................................. 2

**Completion Requirements** .................................................. 14 Credit Hours

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**Mechanical Drafting Technology**

The Mechanical Drafting Technology curriculum prepares technicians to produce drawings of mechanical parts, components of mechanical systems, and mechanisms. CAD and the importance of technically correct drawings and designs based on current standards are emphasized.

Course work includes mechanical drafting, CAD, and proper drawing documentation. Concepts such as machine shop processes, basic materials, and physical sciences as they relate to the design process are also included. The use of proper dimensioning and tolerance techniques is stressed.

Graduates should qualify for employment in mechanical areas such as manufacturing, fabrication, research and development, and service industries.

**MECHANICAL DRAFTING TECHNOLOGY — A50340**

**General Education Courses**

- COM 120 Interpersonal Communications ................................. 3
- ENG 110 Freshman Composition ............................................. 3
- HUM 121 The Nature of America .......................................... 3
- PHY 121 Applied Physics I .................................................... 4
- PSY 118 Interpersonal Psychology .......................................... 3

**Major Courses**

- DDF 211 Design Drafting I ..................................................... 4
- DDF 221 Design Drafting Project ............................................ 2
- DFT 111 Technical Drafting I ............................................... 2
- DFT 111A Technical Drafting I Lab ........................................ 1
- DFT 112 Technical Drafting II ............................................... 2
- DFT 112A Technical Drafting II Lab ...................................... 1
- DFT 121 Introduction to GD and T ........................................... 2
- DFT 151 CAD I ................................................................. 3
- DFT 152 CAD II ............................................................... 3
- DFT 153 CAD III .............................................................. 3
- DFT 161 Pattern Design and Layout ....................................... 2
- DFT 214 Descriptive Geometry ............................................. 2
- DFT 221 Electrical Drafting ................................................. 2
- HYD 110 Hydraulics/Pneumatics ......................................... 3

**MECHANICAL DRAFTING TECHNOLOGY — D50340A**

The Mechanical Drafting Technology diploma curriculum prepares technicians to produce drawings of mechanical parts, components of mechanical systems, and mechanisms. CAD and the importance of technically correct drawings and designs based on current standards are emphasized.

**General Education Courses**

- ENG 110 Freshman Composition ............................................. 3
- PSY 118 Interpersonal Psychology .......................................... 3

**Major Courses**

- DDF 211 Design Drafting I ..................................................... 4
- DDF 221 Design Drafting Project ............................................ 2
- DFT 111 Technical Drafting I ............................................... 2
- DFT 111A Technical Drafting I Lab ........................................ 1
- DFT 112 Technical Drafting II ............................................... 2
- DFT 112A Technical Drafting II Lab ...................................... 1
- DFT 121 Introduction to GD and T ........................................... 2
- DFT 151 CAD I ................................................................. 3
- DFT 152 CAD II ............................................................... 3
- DFT 153 CAD III .............................................................. 3

**MECHANICAL DRAFTING TECHNOLOGY — C50340B**

The Mechanical Drafting Technology certificate curriculum prepares technicians to produce drawings of mechanical parts and components of mechanical systems. CAD and the importance of technically correct drawings and designs based on current standards are emphasized.

Course work includes mechanical drafting, CAD, and proper drawing documentation. The use of proper dimensioning and tolerance techniques is stressed.

Graduates should qualify for employment in mechanical areas such as manufacturing, fabrication, research and development, and service industries requiring entry-level drafting and CAD skills.

- DFT 111 Technical Drafting I ............................................... 2
- DFT 111A Technical Drafting I Lab ........................................ 1
- DFT 151 CAD I ................................................................. 3
- DFT 152 CAD II ............................................................... 3
- DFT 153 CAD III .............................................................. 3

**Completion Requirements** .................................................. 12 Credit Hours
Plumbing

The Plumbing curriculum is designed to give individuals the opportunity to acquire basic skills to assist with the installation and repair of plumbing systems in residential and small buildings.

Course work includes sketching diagrams, interpretation of blueprints, and practices in plumbing assembly. Students will gain knowledge of state codes and requirements.

Graduates should qualify for employment at parts supply houses, maintenance companies, and plumbing contractors to assist with various plumbing applications.

PLUMBING — D35300

General Education Courses
ENG 110 Freshman Composition ........................................... 3
PHY 121 Applied Physics I ................................................. 4

Major Courses
BPR 130 Blueprint Reading/Construction ......................... 2
PLU 110 Modern Plumbing ............................................. 9
PLU 120 Plumbing Applications ........................................... 9
PLU 130 Plumbing Systems ............................................... 6
PLU 140 Introduction to Plumbing Codes ......................... 2
PLU 150 Plumbing Diagrams ............................................. 2
PLU 192 Selected Topics in Plumbing .......................... 2
WLD 112 Basic Welding Processes ................................. 2

Graduation Requirements ......................................... 41 Credit Hours

Plumbing Applications

And Diagrams

The Plumbing certificate curriculum is designed to give individuals the opportunity to acquire basic skills to assist with the installation and repairs of plumbing systems in residential and small buildings.

Course work includes sketching diagrams, interpretation of blueprints, and practices in plumbing assembly. Students will gain knowledge of state codes and requirements.

Graduates should qualify for employment at parts supply houses, maintenance companies, and plumbing contractors to assist with various plumbing applications.

PLUMBING APPLICATIONS AND DIAGRAMS — C35300A

PLU 120 Plumbing Applications ........................................... 9
PLU 140 Introduction to Plumbing Codes ......................... 2
PLU 192 Selected Topics in Plumbing .......................... 2
WLD 112 Basic Welding Processes ................................. 2

Completion Requirements ......................................... 15 Credit Hours

Modern Plumbing Codes And Blueprint Reading

The Plumbing certificate curriculum is designed to give individuals the opportunity to acquire basic skills to assist with the installation and repairs of plumbing systems in residential and small buildings.

Course work includes sketching diagrams, interpretation of blueprints, and practices in plumbing assembly. Students will gain additional knowledge of State Codes and requirements.

Graduates should qualify for employment at parts supply houses, and for entry-level positions with maintenance companies and plumbing contractors to assist with various plumbing applications.

PLUMBING: MODERN PLUMBING, CODES, AND BLUEPRINT READING — C35300B

BPR 130 Blueprint Reading/Construction ......................... 2
PHY 121 Applied Physics I ................................................. 4
PLU 110 Modern Plumbing ............................................. 9
PLU 150 Plumbing Diagrams ............................................. 2

Completion Requirements ......................................... 17 Credit Hours

Welding Technology

The Welding Technology curriculum provides students with a sound understanding of the science, technology, and applications essential for successful employment in the welding and metal industry.

Instruction includes consumable and non-consumable electrode welding and cutting processes. Courses in math, blueprint reading, metallurgy, welding inspection, and destructive and non-destructive testing provide the student with industry-standard skills developed through classroom training and practical application.

Successful graduates of the Welding Technology diploma curriculum may be employed as entry-level technicians in welding and metalworking industries. Career opportunities also exist in construction, manufacturing, fabrication, sales, quality control, supervision, and welding-related self-employment.

WELDING TECHNOLOGY — D50420A

General Education Courses
ENG 110 Freshman Composition ........................................... 3
PHY 121 Applied Physics I ................................................. 4

Major Courses
WLD 110 Cutting Processes ................................................. 2
WLD 111 Oxygen-Fuel Welding ........................................... 2
WLD 115 SMAW (Stick) Plate ................................................. 5
WLD 116 SMAW (Stick) Plate/Pipe ....................................... 4
WLD 121 GMAW (MIG) FCAW/Plate ................................... 4
WLD 122 GMAW (MIG) Plate/Pipe ....................................... 3
WLD 131 GTA (TIG) Plate ................................................... 4
WLD 132 GTA (TIG) Plate/Pipe ............................................. 3
WLD 141 Symbols and Specifications .............................. 3
WLD 261 Certification Practices ........................................... 2
WLD 262 Inspection and Testing ........................................... 3

Graduation Requirements ............................................. 42 Credit Hours
WELDING TECHNOLOGY — C50420B

Instruction includes an introduction to consumable and non-
consumable electrode welding and cutting processes. Additional
courses in blueprint reading, metallurgy, and destructive testing
provides the student with industry-standard skills developed through
classroom training and practical application.

Successful graduates of the Welding Technology certificate
curriculum may be employed as entry-level technicians in welding
and metalworking industries. Career opportunities also exist in
construction, manufacturing, fabrication, sales, quality control, and
welding-related self-employment.

WLD 115  SMAW (Stick) Plate-Part 1.................................5
WLD 131  GTAW (TIG) Plate..............................................4
WLD 141  Symbols and Specifications.................................3

Completion Requirements ......................................12 Credit Hours
Business Technologies

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DEGREES
Accounting
Business Administration
Business Administration/Human Resources Management
Criminal Justice Technology
Criminal Justice Technology/Latent Evidence
Culinary Technology
Early Childhood Associate
Hotel and Restaurant Management
Medical Office Administration
Office Systems Technology
Office Systems Technology/Legal

DIPLOMAS
Early Childhood Associate
Office Systems Technology

CERTIFICATES
Accounting: Payroll Accounting Clerk
Accounting: Income Tax Preparer
Business Administration: Customer Service
Business Administration: E-Commerce
Business Administration: Entrepreneurship
Business Administration: Sales Development
Business Administration/Human Resources Management
Culinary Technology
Culinary Technology: Baking
Early Childhood Associate
Early Childhood Associate: Infant/Toddler Care
Hotel and Restaurant Management: Hotel Management
Hotel and Restaurant Management: Restaurant Management
Medical Office Administration: Medical Office Specialist
Medical Office Administration: Medical Billing and Coding

COLLABORATIVE AGREEMENTS
Court Reporting and Captioning A25140
Collaborative with Lenoir Community College
Global Logistics Technology A25170
Collaborative with Lenoir Community College

Wake Technical Community College  |  www.waketech.edu
Accounting

The Accounting curriculum is designed to provide students with the knowledge and the skills necessary for employment and growth in the accounting profession. Using the "language of business," accountants assemble, analyze, process, and communicate essential information about financial operations.

In addition to course work in accounting principles, theories, and practice, students will study business law, finance, management, and economics. Related skills are developed through the study of communications, computer applications, financial analysis, critical thinking skills, and ethics.

Graduates should qualify for entry-level accounting positions in many types of organizations including accounting firms, small businesses, manufacturing firms, banks, hospitals, school systems, and governmental agencies. With work experience and additional education, an individual may advance in the accounting profession.

ACCOUNTING — A25100
-Day and Evening

General Education Courses
ENG 111 Expository Writing .......................... 3
ENG 114 Professional Research and Reporting ...... 3
MAT 115 Mathematical Models .......................... 3
PSY 118 Interpersonal Psychology ....................... 3
Humanities/Fine Arts Elective .......................... 3

Major Courses
ACC 120 Principles of Financial Accounting ............. 4
ACC 121 Principles of Managerial Accounting ........... 4
ACC 122 Principles of Financial Accounting II ........... 3
ACC 129 Individual Income Taxes ....................... 3
ACC 130 Business Income Taxes .......................... 3
ACC 140 Payroll Accounting .............................. 2
ACC 149 Introduction to Accounting Spreadsheets ....... 2
ACC 150 Accounting Software Applications ............... 2
ACC 215 Ethics in Accounting ............................ 3
ACC 220 Intermediate Accounting I ....................... 4
ACC 225 Cost Accounting .................................... 3
ACC 227 Practices in Accounting ........................... 3
ACC 240 Governmental and Not-for-Profit Accounting .... 3
ACC 268 Information Systems and Internal Controls ..... 3
BUS 115 Business Law I ..................................... 3
BUS 121 Business Math ....................................... 3
BUS 225 Business Finance .................................. 3
CIS 111 Basic PC Literacy .................................. 2
ECO 151 Survey of Economics ............................ 3

Graduation Requirements ..................................... 71 Credit Hours

Business Administration

The Business Administration curriculum is designed to introduce students to the various aspects of the free enterprise system. Students will be provided with a fundamental knowledge of business functions, processes, and an understanding of business organizations in today's global economy.

Course work includes business concepts such as accounting, business law, economics, management, and marketing. Skills related to the application of these concepts are developed through the study of computer applications, communication, team building, and decision making.

Through these skills, students will have a sound business education base for lifelong learning. Graduates are prepared for employment opportunities in marketing, management operations, and some graduates have started up their own small businesses.

BUSINESS ADMINISTRATION — A25120
-Day and Evening

General Education Courses
ENG 111 Expository Writing .......................... 3
ENG 114 Professional Research and Reporting ...... 3
MAT 115 Mathematical Models .......................... 3
PSY 150 General Psychology ............................. 3
Humanities/Fine Arts Elective .......................... 3

Major Courses
ACC 120 Principles of Financial Accounting ............. 4
BUS 110 Introduction to Business .......................... 3
BUS 115 Business Law I ..................................... 3
BUS 116 Business Law II ................................... 3
BUSINESS ADMINISTRATION/  
HUMAN RESOURCES

MANAGEMENT — A2512C  
-Day and Evening

General Education Courses
ENG 111 Expository Writing .................................................. 3
ENG 114 Professional Research and Reporting ............................ 3
MAT 115 Mathematical Models .................................................. 3
PSY 150 General Psychology .................................................... 3
Humanities/Fine Arts Elective .................................................. 3

Major Courses
ACC 120 Principles of Financial Accounting .................................. 4
BUS 110 Introduction to Business ............................................. 3
BUS 115 Business Law .............................................................. 3
BUS 121 Business Math ............................................................. 3
BUS 137 Principles of Management ........................................... 3
BUS 153 Human Resource Management ..................................... 3

Completion Requirements .................................................... 15 Credit Hours

BUSINESS ADMINISTRATION/  
HUMAN RESOURCES

MANAGEMENT C2512CA  
-Evening Only

This program is intended to prepare students for positions in human resource management in business and government. When they are enrolled in the courses unique to this program, students will be expected to practice the routines that they would have as human resource specialists: write job descriptions, interview job applicants, design and conduct training sessions, and evaluate profit-sharing programs. Also, they will gain respect for the growing body of laws, regulations, and court decisions that affect the daily activities of everyone in the workplace.

Those completing this program should be able to provide knowledgeable assistance to higher-level managers, either inside or outside the human resource department.

BUS 153 Human Resource Management ..................................... 3
BUS 217 Employment Law and Regulations .................................. 3
BUS 234 Training and Development ........................................... 3
BUS 256 Recruitment, Selection, and Personnel Planning ............... 3
BUS 258 Compensation and Benefits .......................................... 3

Completion Requirements .................................................... 15 Credit Hours
BUSINESS ADMINISTRATION: E-Commerce — C2512IA
-Day Only
This certificate in Electronic Commerce introduces participants to the critical competencies and skills needed to effectively identify, develop, and implement e-commerce business strategies in various types of organizations. The E-Commerce certificate program combines traditional business disciplines with specialized courses in electronic commerce.

ECM 210 Intro to Electronic Commerce ........................................ 3
ECM 220 E-Commerce Planning and Implementation ................. 3
WEB 110 Introduction to the Internet ............................................. 3
WEB 140 Web Development Tools .............................................. 3
Completion Requirements ......................................................... 12 Credit Hours

BUSINESS ADMINISTRATION: SALES DEVELOPMENT — C25120A
-Day and Evening
This certificate prepares students to enter the sales profession. Study includes accepted principles and techniques of selling, interpersonal skills involving communication fundamentals, and motivation theory. Students learn prospecting and preapproach activities, specific strategies for handling objections, ways to gain an interview, demonstration tools, and closing methods. Study includes both retail selling and industrial selling. The program also includes legal and ethical considerations.

BUS 121 Business Mathematics .................................................... 3
ENG 111 Expository Writing .......................................................... 3
MKT 120 Principles of Marketing .................................................. 3
MKT 123 Fundamentals of Selling ................................................. 3
MKT 221 Consumer Behavior ....................................................... 3
PSY 118 Interpersonal Psychology ................................................ 3
Completion Requirements ......................................................... 18 Credit Hours

BUSINESS ADMINISTRATION: CUSTOMER SERVICE — C25120B
-Day and Evening
Customer Service is a certificate under the Business Administration curriculum. This certificate provides a broad foundation of communication and interpersonal skills designed to prepare the individual for customer contact roles within a business organization.

BUS 110 Introduction to Business ................................................. 3
BUS 121 Business Math ............................................................... 3
BUS 151 People Skills ................................................................. 3
CIS 110 Introduction to Computers .............................................. 3
MKT 223 Customer Service .......................................................... 3
Completion Requirements ......................................................... 15 Credit Hours

BUSINESS ADMINISTRATION: ENTREPRENEURSHIP — C25120C
-Day Only
This certificate enables students to recognize business opportunities and develop a business plan for the purpose of securing financing for a business start-up as well as to understand how to effectively operate a small business. Students will learn practical skills and some of the best business practices in establishing and operating a business.

BUS 110 Introduction to Business .................................................. 3
BUS 139 Entrepreneurship I ......................................................... 3
BUS 245 Entrepreneurship II ...................................................... 3
MKT 120 Principles of Marketing .................................................. 3
Completion Requirements ......................................................... 12 Credit Hours

Criminal Justice Technology

The Criminal Justice Technology curriculum is designed to provide knowledge of criminal justice systems and operations. Study will focus on local, state, and federal law enforcement, judicial processes, corrections, and security services. The criminal justice system's role within society will be explored.

Emphasis is on criminal justice systems, criminology, juvenile justice, criminal and constitutional law, investigative principles, ethics, and community relations. Additional study may include issues and concepts of government, counseling, communications, computers, and technology.

Employment opportunities exist in a variety of local, state, and federal law enforcement, corrections, and security fields. Examples include police officer, deputy sheriff, county detention officer, state trooper, intensive probation/parole surveillance officer, correctional officer, and loss prevention specialist.

CRIMINAL JUSTICE TECHNOLOGY — A55180
-Day, Evening, and Online

General Education Courses
ENG 111 Expository Writing .......................................................... 3
ENG 112 Argument-Based Research .............................................. 3
MAT 115 Mathematical Models .................................................... 3
Humanities/Fine Arts Elective ....................................................... 3
Social/Behavioral Science Elective ................................................ 3

Major Courses
CIS 111 Basic PC Literacy ........................................................... 2
CJC 111 Introduction to Criminal Justice ...................................... 3
CJC 112 Criminology ................................................................. 3
CJC 113 Juvenile Justice .............................................................. 3
CJC 121 Law Enforcement Operations ......................................... 3
CJC 131 Criminal Law ............................................................... 3
CJC 132 Court Procedure and Evidence ..................................... 3
CJC 212 Ethics and Community Relations .................................. 3
CJC 213 Substance Abuse ......................................................... 3
CJC 221 Investigative Principles ............................................... 4
CJC 222 Criminalistics ............................................................... 3
CJC 231 Constitutional Law ......................................................... 3
CJC 232 Civil Liability ................................................................. 3
CJC 293 Selected Topics in Criminal Justice Technology ................ 3
Major Elective ........................................................................ 11

Major Electives
Select 11 hours from the following courses
CJC 120 Interviews/Investigations .............................................. 2
CJC 122 Community Policing ..................................................... 3
CJC 141 Corrections ................................................................. 3
CJC 215 Organization and Administration .................................. 3
CJC 223 Organized Crime ......................................................... 3

Graduation Requirements ......................................................... 68 Credit Hours
LATENT EVIDENCE — A5518A
- Day Only
Latent Evidence is a concentration under the curriculum of Criminal Justice Technology. This curriculum is designed to provide knowledge of latent evidence systems and operations. Study will focus on local, state, and federal law enforcement, evidence processing, and procedures.

Students will learn both theory and hands-on analysis of latent evidence. They will learn fingerprint classification, identification, and chemical development. Students will record, cast, and recognize footwear and tire-tracks; and process crime scenes. Issues and concepts of communications and the use of computers and computer-assisted design programs in crime scene technology will be discussed.

Graduates should qualify for employment in a variety of criminal justice organizations especially in local, state, and federal law enforcement, and correctional agencies.

General Education Courses
ENG 111 Expository Writing ................................................................. 3
ENG 114 Professional Research & Reporting ........................................... 3
HUM 115 Critical Thinking ................................................................. 3
MAT 110 Mathematical Measurement .................................................. 3
MAT 140 Survey of Mathematics ......................................................... 3
PSY 150 General Psychology ............................................................. 3

Major Courses
CJC 111 Basic PC Literacy ................................................................. 2
CJC 112 Criminology ............................................................................ 3
CJC 113 Juvenile Justice ................................................................. 3
CJC 114 Investigative Photography ..................................................... 2
CJC 131 Criminal Law ................................................................. 3
CJC 144 Crime Scene Processing ......................................................... 3
CJC 145 Crime Scene CAD ................................................................. 3
CJC 146 Trace Evidence ................................................................. 3
CJC 212 Ethics and Community Relations ........................................... 3
CJC 221 Investigative Principles ......................................................... 4
CJC 222 Criminalistics ................................................................. 3
CJC 231 Constitutional Law ............................................................ 3
CJC 244 Footwear & Tire Imprints ......................................................... 3
CJC 245 Basic Friction Ridge Analysis .................................................. 3
CJC 246 Advanced Friction Ridge Analysis ........................................... 3
CJC 250 Forensic Biology ................................................................. 3
CJC 251 Forensic Chemistry I ............................................................ 3

Graduation Requirements ................................................................. 71 Credit Hours

CULINARY TECHNOLOGY — A55200
- Day Only

General Education Courses
ENG 111 Expository Writing ................................................................. 3
ENG 114 Professional Research & Reporting ........................................... 3
MAT 115 Mathematical Models ............................................................ 3

Major Courses
CIS 111 Basic PC Literacy ................................................................. 2
COE 112 Co-op Work Experience I ....................................................... 2
COE 122 Co-op Work Experience II ..................................................... 2
CUL 110 Sanitation and Safety ............................................................ 2
CUL 112 Nutrition for Food Service ..................................................... 3
CUL 120 Purchasing ............................................................................ 2
CUL 120A Purchasing Lab ................................................................. 1
CUL 125 Hospitality Information Systems ............................................ 2
CUL 135 Food and Beverage Service ................................................... 2
CUL 135A Food and Beverage Service Lab ........................................... 1
CUL 140 Basic Culinary Skills .............................................................. 5
CUL 160 Baking I ................................................................................. 3
CUL 170 Garde-Manger I ................................................................. 3
CUL 180 International and American Regional Cuisine ...................... 5
CUL 240 Advanced Culinary Skills ..................................................... 5
CUL 250 Classical Cuisine ................................................................. 5
CUL 260 Baking II .............................................................................. 3
CUL 270 Garde-Manger II ................................................................. 3
HRM 145 Hospitality Supervision ......................................................... 3
SPA 120 Spanish for the Workplace ..................................................... 3

Graduation Requirements ................................................................. 74 Credit Hours

Culinary Technology
The Culinary Technology curriculum provides specific training required to prepare students to assume positions as trained culinary professionals in a variety of food service settings including full service restaurants, hotels, resorts, clubs, catering operations, contract food service, and health care facilities.

Course offerings emphasize practical application, a strong theoretical knowledge base, and professionalism and provide the critical competencies to successfully meet industry demands. Courses also include sanitation, food/beverage service and control, baking, garde manger, American/International cuisines, and hospitality supervision.

Graduates should qualify for entry-level positions such as line cook, station chef, and assistant pastry chef. American Culinary Federation certification is available to graduates. With experience, graduates may advance to positions such as sous-chef, executive chef, or food service manager.
**CULINARY TECHNOLOGY — C55200A**  
- Day and Evening  
The Culinary Certificate includes basic courses to help prepare students for entry into the culinary field or to advance in their current foodservice jobs.  

Courses address both the art and the science of food preparation. Students learn basic sanitation, cooking and baking principles, and garnishing and presentation skills. Modern supervision techniques are also studied and practiced. The majority of class time is devoted to actual hands-on kitchen skill development.  

Courses credits are transferable to the Culinary Technology associate degree program.  

**Major Courses**  
- CUL 110 Sanitation and Safety ........................................... 2  
- CUL 140 Basic Culinary Skills ........................................... 5  
- CUL 160 Baking I .................................................................... 3  
- CUL 240 Advanced Culinary Skills ..................................... 5  
- HRM 145 Hospitality Supervision ........................................ 3  

**Completion Requirements** ........................................... 18 Credit Hours  

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**CULINARY TECHNOLOGY: BAKING—C55200B**  
- Day Only  
The Baking certificate includes basic courses to help prepare students for entry into the baking field or to advance in their current foodservice jobs. Courses address both the art and the science of baking. Students learn basic sanitation, cooking and baking principles, as well as pastry, confection and production baking skills. The majority of class time is devoted to actual hands-on baking skill development.  

**Major Courses**  
- BPA 250 Dessert and Bread Production .................................. 5  
- CUL 110 Sanitation and Safety ........................................... 2  
- CUL 160 Baking I .................................................................... 3  
- CUL 260 Baking II .................................................................... 3  
- CUL 280 Pastries and Confections ........................................ 3  

**Completion Requirements** ........................................... 16 Credit Hours  

Please Note:  CUL 140, Basic Culinary Skills is a pre-requisite for CUL 160, Baking I.  

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**EARLY CHILDHOOD ASSOCIATE — A55220**  
- Day and Evening  

**General Education Courses**  
- ENG 111 Expository Writing .............................................. 3  
- ENG 112 Argument-Based Research .................................... 3  
- MAT 115 Mathematical Models ........................................... 3  
- PSY 150 General Psychology .............................................. 3  

**Major Courses**  
- CIS 111 Basic PC Literacy ................................................ 2  
- COE 111 Co-op Work Experience I ...................................... 1  
- COE 121 Co-op Work Experience II ..................................... 1  
- COE 131 Co-op Work Experience III ................................... 1  
- COE 211 Co-op Work Experience IV .................................... 1  
- EDU 119 Introduction to Early Childhood Education ............ 4  
- EDU 131 Child, Family, and Community .............................. 3  
- EDU 144 Child Development I ............................................. 3  
- EDU 145 Child Development II ........................................... 3  
- EDU 146 Child Guidance .................................................... 3  
- EDU 150 Music, Movement, and Language ......................... 3  
- EDU 153 Health, Safety, and Nutrition ................................. 3  
- EDU 157 Active Play .......................................................... 3  
- EDU 185 Cognitive and Language Activities ......................... 3  
- EDU 221 Children with Exceptionalities ............................... 3  
- EDU 251 Exploration Activities .......................................... 3  
- EDU 261 Early Childhood Administration I ......................... 3  
- EDU 262 Early Childhood Administration II ....................... 3  
- EDU 271 Educational Technology ........................................ 3  
- EDU 280 Language and Literacy Experiences ...................... 3  
- EDU 282 Early Childhood Literature .................................... 3  

**Major Electives**  
Select one of the following courses  
- EDU 234 Infants, Toddlers, and Twos ................................. 3  
- EDU 263 Developing School-Age Programs ......................... 2  

**Graduation Requirements** .............................................. 75 Credit Hours  

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**EARLY CHILDHOOD ASSOCIATE—D55220A**  
- Day and Evening  
The Early Childhood diploma prepares individuals to work as assistants with early childhood specialists in children centers, nursery schools, kindergartens, child development centers, hospitals, institutions, camps, and recreation centers. This curriculum provides course work to meet the requirements for middle-level employment and upgrading or the retraining of staff in child development facilities. Instruction includes theory and application in early childhood, growth, and development of children, behavior patterns of children, health practices, and how to deal with the emotional and physical problems of children.  

**General Education Courses**  
- ENG 111 Expository Writing .............................................. 3  
- ENG 112 Argument-Based Research .................................... 3  
- MAT 115 Mathematical Models ........................................... 3  
- PSY 150 General Psychology .............................................. 3  

**Major Courses**  
- COE 111 Co-op Work Experience I ...................................... 1  
- COE 121 Co-op Work Experience II ..................................... 1  
- EDU 119 Introduction to Early Childhood Education ............ 4  
- EDU 131 Child, Family, and Community .............................. 3  
- EDU 144 Child Development I ............................................. 3  
- EDU 145 Child Development II ........................................... 3  
- EDU 146 Child Guidance .................................................... 3  
- EDU 150 Music, Movement, and Language ......................... 3  
- EDU 153 Health, Safety, and Nutrition ................................. 3  
- EDU 157 Active Play .......................................................... 3  

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2008-2009 | Wake Technical Community College
EARLY CHILDHOOD ASSOCIATE— C55220B
-Day and Evening
The Early Childhood certificate prepares individuals to work at entry-level employment in child development centers, nursery schools, camps, and recreation centers. This certificate provides instruction in child development and the behavior patterns of infants through four-year olds. This course work will transfer to the Early Childhood diploma and associate degree.

EDU 119 Introduction to Early Childhood Education ............... 4
EDU 131 Child, Family, and Community .................................. 3
EDU 144 Child Development I ................................................. 3
EDU 153 Health, Safety, and Nutrition ..................................... 3
EDU 234 Infant, Toddlers, and Twos ....................................... 3
Completion Requirements ...................................................... 16 Credit Hours

EARLY CHILDHOOD ASSOCIATE:
INFANT/TODDLER CARE— C55220C
-Day and Evening
The Infant/Toddler Care certificate provides a strong foundation for early childhood professionals working with very young children. The North Carolina Division of Child Development includes this certificate as one option in obtaining quality points in the revised Star Rated License system.

EDU 119 Introduction to Early Childhood Education ............... 4
EDU 131 Child, Family, and Community .................................. 3
EDU 144 Child Development I ................................................. 3
EDU 153 Health, Safety, and Nutrition ..................................... 3
EDU 234 Infant, Toddlers, and Twos ....................................... 3
Completion Requirements ...................................................... 13 Credit Hours

Hotel & Restaurant Management

The Hotel and Restaurant Management curriculum prepares students to understand and apply the administrative and practical skills needed for supervisory and managerial positions in hotels, motels, resorts, inns, restaurants, institutions, and clubs.

Course work includes front office management, guest services, sanitation, menu writing, quality management, purchasing, and other areas critical to the success of hospitality professionals.

Upon completion, graduates should qualify for supervisory or entry-level management positions in food and lodging including: front office, reservations, housekeeping, purchasing, dining room, and marketing. Opportunities are also available in the support areas of food and equipment sales.

HOTEL AND RESTAURANT MANAGEMENT — A25240
-Day Only

General Education Courses
ENG 111 Expository Writing .................................................. 3
ENG 114 Professional Research and Reporting ......................... 3
MAT 115 Mathematical Models ............................................. 3
Social/Behavioral Science Elective ........................................ 6

Major Courses
ACC 175 Hotel and Restaurant Accounting ............................. 4
BUS 110 Introduction to Business .......................................... 3
CIS 111 Basic PC Literacy .................................................... 2
COE 112 Co-op Work Experience I ....................................... 2
CTS 135 Integrated Software Introduction ............................... 4
CUL 110 Sanitation and Safety ........................................... 2
CUL 135 Food and Beverage Service ....................................... 2
CUL 135A Food and Beverage Service Lab .............................. 1
CUL 142 Fundamentals of Food .......................................... 5
CUL 214 Wine Appreciation ................................................ 2
HRM 110 Introduction to Hospitality ..................................... 2
HRM 140 Hospitality Tourism Law ....................................... 3
HRM 145 Hospitality Supervision ......................................... 3
HRM 220 Food and Beverage Controls .................................. 3
HRM 220A Food and Beverage Control Lab ........................... 1
HRM 240 Hospitality Marketing .......................................... 3
HRM 280 Hospitality Management Problems .......................... 3
SPA 120 Spanish for the Workplace ..................................... 3

Major Electives
Select one from the following complete sets of courses

Hotel Option
HRM 115 Housekeeping ....................................................... 3
HRM 210 Meetings and Conventions ..................................... 3

Restaurant Option
CUL 130 Menu Design ......................................................... 2
HRM 215 Restaurant Management ........................................ 3
HRM 225 Beverage Management .......................................... 2

Bachelor's Degree Programs
- Day Only
The Bachelor's Degree Programs prepare students for supervisory/managerial positions in hotels, motels, resorts, inns, restaurants, institutions, and clubs.
and clubs. Course work includes front office management, meetings, conventions, guest services, sanitation, quality management, and other areas critical to the success of hospitality professionals. Upon completion, graduates should qualify for supervisory or entry-level management positions in lodging, including front office and reservations. Opportunities are also available in the support areas of food and equipment sales.

ACC 175 Hotel and Restaurant Accounting ......................... 4
CUL 110 Sanitation and Safety ........................................... 2
HRM 110 Introduction to Hospitality ..................................... 2
HRM 120 Front Office Procedures ......................................... 3
HRM 145 Hospitality Supervision ......................................... 3
HRM 210 Meetings and Conventions .................................... 3

Completion Requirements .................................................. 18 Credit Hours

HOTEL AND RESTAURANT MANAGEMENT: RESTAURANT MANAGEMENT—C25240B
-Day Only
The Restaurant Management certificate prepares students to understand and apply the administrative and practical skills needed for supervisory and managerial positions in restaurants, institutions, and clubs. Course work includes guest services, sanitation, quality management, accounting, and other areas critical to the success of restaurant professionals. Upon completion, graduates should qualify for supervisory or entry-level management positions in restaurant, club, or resort supervision. Opportunities are also available in the support areas of food and equipment sales.

ACC 175 Hotel and Restaurant Accounting ......................... 4
CUL 110 Sanitation and Safety ........................................... 2
CUL 135 Food and Beverage Service ..................................... 2
CUL 135A Food and Beverage Service Lab ........................... 1
HRM 110 Introduction to Hospitality ..................................... 2
HRM 215 Restaurant Management ......................................... 3
HRM 220 Food and Beverage Controls ................................. 3

Completion Requirements .................................................. 17 Credit Hours

Office Systems Technology
The Office Systems Technology curriculum prepares individuals for positions in administrative support careers. It equips office professionals to respond to the demands of a dynamic computerized workplace.

Students will complete courses designed to develop proficiency in the use of integrated software, oral and written communication, analysis and coordination of office duties and systems, and other support topics. Emphasis is placed on non-technical as well as technical skills.

Graduates should qualify for employment in a variety of positions in business, government, and industry. Job classifications range from entry-level to supervisory to middle management positions.

OFFICE SYSTEMS TECHNOLOGY—A25360
-Day and Online

General Education Courses
ENG 111 Expository Writing ............................................... 3
ENG 114 Professional Research and Reporting ....................... 3
MAT 115 Mathematical Models ............................................. 3
PSY 118 Interpersonal Psychology ....................................... 3

Humanities/Fine Arts Elective ............................................... 3

Major Courses
ACC 111 Financial Accounting ........................................... 3
BUS 260 Business Communications ................................... 3
OST 122 Office Computations ............................................ 2
OST 132 Keyboard Skill Building ........................................ 3
OST 134 Text Entry and Formating ...................................... 3
OST 135 Advanced Text Entry and Formating ....................... 4
OST 136 Word Processing .................................................. 2
OST 137 Office Software Applications ................................. 2
OST 138 Advanced Software Applications ............................ 3
OST 164 Text Editing Applications .................................... 3
OST 181 Introduction to Office Systems ............................... 3
OST 184 Records Management ........................................... 2
OST 188 Issues in Office Technology .................................. 2
OST 198 Seminar in Office Spreadsheets ............................. 3
OST 233 Office Publications Design .................................... 3
OST 236 Advanced Word/Information Processing .................. 3
OST 284 Emerging Technologies ......................................... 2
OST 286 Professional Development ...................................... 3
OST 289 Office Systems Management ................................. 3
OST 296 Seminar in Office Web Technologies ....................... 1
OST 297 Seminar in Office Presentations .............................. 2

Co-op Work Experience
Select two hours from the following courses
COE 111 Co-op Work Experience I ...................................... 1
COE 112 Co-op Work Experience II ..................................... 2
COE 121 Co-op Work Experience III ................................... 1

Graduation Requirements .................................................. 71 Credit Hours
OFFICE SYSTEMS TECHNOLOGY — D25360A
Day, Evening and Online
The Office Systems Technology diploma program is designed for the individual entering, upgrading, or retraining in the office occupation field. Special emphasis is on keyboarding, office software, and basic office duties and responsibilities.

Through study in areas such as keyboarding, records management, written communications, word processing, and software applications, the individual will be able to function effectively in a variety of office occupations.

General Education Courses
ENG 111 Expository Writing .................................................. 3
ENG 114 Professional Research and Reporting ........................... 3

Major Courses
COE 111 Co-op Experience I .................................................. 1
OST 122 Office Computations ................................................... 2
OST 134 Text Entry and Formatting ....................................... 3
OST 135 Adv Text Entry and Formatting ................................... 4
OST 136 Word Processing ....................................................... 2
OST 137 Office Software Applications ..................................... 2
OST 164 Text Editing Applications ......................................... 3
OST 181 Introduction to Office Systems ................................... 3
OST 184 Records Management ................................................. 2
OST 188 Issues in Office Technology ....................................... 2
OST 198 Seminar in Office Spreadsheets .................................. 3
OST 286 Professional Development .......................................... 3
OST 297 Seminar in Office Presentations ................................... 2

Graduation Requirements ............................................... 38 Credit Hours

OFFICE SYSTEMS TECHNOLOGY: WORD PROCESSING & PUBLICATIONS CERTIFICATE — C25360E
—Online Only
The Word Processing/Publications certificate program provides the skills necessary to design and produce quality professional documents that combine text, graphics, illustrations, and photographs. This concentrated program includes design templates, graphic manipulation tools, color schemes, advanced layout techniques, advanced word processing, editing, and proofreading. Employment opportunities include offices that produce newsletters, flyers, logos, signs, and forms.

OST 134 Text Entry and Formatting ....................................... 3
OST 136 Word Processing ....................................................... 2
OST 137 Office Software Applications ..................................... 2
OST 164 Text Editing Applications ......................................... 3
OST 233 Office Publications Design ......................................... 3
OST 236 Advanced Word/Information Processing ......................... 3

Completion Requirements ............................................. 16 Credit Hours

OFFICE SYSTEMS TECHNOLOGY: OFFICE SPECIALIST— C25360F
—Day, Evening and Online
The Office Specialist certificate program provides the technical and administrative support skills necessary for entry-level employment in a variety of offices. This concentrated program includes document processing, records management, internet research, editing, proofreading, and office culture issues. Employment opportunities exist in all areas of business and industry.

OST 122 Office Computations .................................................. 2
OST 134 Text Entry and Formatting ....................................... 3
OST 137 Office Software Applications ..................................... 2
OST 184 Records Management ................................................. 2
OST 136 Word Processing ....................................................... 2

OFFICE SYSTEM TECHNOLOGY/LEGAL— A2536A
—Online
Legal is a concentration under the curriculum title of Office Systems Technology. This curriculum prepares individuals for entry-level positions in legal or government-related offices and provides professional development for the currently employed.

Course work includes terminology, operational procedures, preparation and transcription of documents, computer software, and court-related functions as they relate to the legal office profession. Emphasis is placed on the development of accuracy, organizational skills, discretion, and professionalism.

Graduates should qualify for employment in corporate legal departments; private practices, including real estate and estate planning; and city, state, and federal government offices. With appropriate work experience, graduates may apply for certification as a Professional Legal Secretary (PLS).

General Education Courses
ENG 111 Expository Writing .................................................. 3
ENG 114 Professional Research and Reporting ........................... 3
MAT 115 Mathematical Models ................................................. 3
PSY 118 Interpersonal Psychology ........................................... 3
Humanities/Fine Arts Elective .................................................. 3

Major Courses
BUS 115 Business Law ........................................................... 3
BUS 260 Business Communications ......................................... 3
OST 122 Office Computations .................................................. 2
OST 132 Keyboard Skill Building .............................................. 2
OST 134 Text Entry and Formatting ....................................... 3
OST 135 Advanced Text Entry and Formatting ......................... 4
OST 136 Word Processing ....................................................... 2
OST 137 Office Software Applications ..................................... 2
OST 138 Advanced Software Applications ................................ 3
OST 155 Legal Terminology ..................................................... 3
OST 156 Legal Office Procedures ............................................. 3
OST 164 Text Editing Applications ......................................... 3
OST 184 Records Management ................................................. 2
OST 188 Issues in Office Technology ....................................... 2
OST 198 Seminar in Office Spreadsheets .................................. 3
OST 236 Advanced Word/Information Processing ......................... 3
OST 242 Legal Transcription I .................................................. 3
OST 284 Emerging Technologies .............................................. 3
OST 286 Professional Development ......................................... 3

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### Business Technologies

#### OFFICE SYSTEMS TECHNOLOGY/LEGAL—C2536AA

**Online**

The Office Systems Technology/Legal certificate prepares individuals for entry-level positions in legal or government-related offices and provides professional development for the currently employed.

**Course Work** includes terminology, operational procedures, preparation and transcription of documents, and records management in the legal office context.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OST 134</td>
<td>Text Entry and Formatting</td>
<td>3</td>
</tr>
<tr>
<td>OST 136</td>
<td>Word Processing</td>
<td>2</td>
</tr>
<tr>
<td>OST 155</td>
<td>Legal Terminology</td>
<td>3</td>
</tr>
<tr>
<td>OST 156</td>
<td>Legal Office Procedures</td>
<td>3</td>
</tr>
<tr>
<td>OST 184</td>
<td>Records Management</td>
<td>2</td>
</tr>
<tr>
<td>OST 252</td>
<td>Legal Transcription I</td>
<td>3</td>
</tr>
</tbody>
</table>

**Completion Requirements**

**16 Credit Hours**

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#### MEDICAL OFFICE ADMINISTRATION — A25310

**-Day Only**

This curriculum prepares individuals for entry-level positions in medical and allied health facilities. Jobs include transcriptionist, secretary, hospital unit secretary, records clerk, insurance form preparer, patient accounting clerk, and clinical technician.

**Course Work** includes processing, compiling, recording, and maintaining medical records; utilizing office equipment and software; medical law and ethics; billing and coding; and transcribing medical documents.

**Employment Opportunities** include the offices of allied health facilities, HMOs, insurance claims processors, laboratories, and manufacturers and suppliers of medical and hospital equipment.

**General Education Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Professional Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>MAT 115</td>
<td>Mathematical Models</td>
<td>3</td>
</tr>
<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

**Humanities/Fine Arts Elective**

**Major Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<td>BUS 260</td>
<td>Business Communications</td>
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<td>OST 122</td>
<td>Office Computations</td>
<td>2</td>
</tr>
<tr>
<td>OST 131</td>
<td>Keyboarding</td>
<td>2</td>
</tr>
<tr>
<td>OST 134</td>
<td>Text Entry and Formatting</td>
<td>3</td>
</tr>
<tr>
<td>OST 135</td>
<td>Advanced Text Entry and Formatting</td>
<td>4</td>
</tr>
<tr>
<td>OST 136</td>
<td>Word Processing</td>
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<tr>
<td>OST 137</td>
<td>Office Software Applications</td>
<td>2</td>
</tr>
<tr>
<td>OST 141</td>
<td>Medical Terms I-Medical Office</td>
<td>3</td>
</tr>
<tr>
<td>OST 142</td>
<td>Medical Terms II-Medical Office</td>
<td>3</td>
</tr>
<tr>
<td>OST 149</td>
<td>Medical Coding, Billing, and Insurance</td>
<td>3</td>
</tr>
<tr>
<td>OST 153</td>
<td>Medical Legal Issues</td>
<td>3</td>
</tr>
<tr>
<td>OST 154</td>
<td>Text Editing Applications</td>
<td>3</td>
</tr>
<tr>
<td>OST 181</td>
<td>Introduction to Office Systems</td>
<td>3</td>
</tr>
<tr>
<td>OST 184</td>
<td>Records Management</td>
<td>2</td>
</tr>
<tr>
<td>OST 188</td>
<td>Issues in Office Technology</td>
<td>2</td>
</tr>
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</table>

**OST Elective**

**2 Credit Hours**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>OST 198</td>
<td>Seminar in Office Spreadsheets</td>
<td>3</td>
</tr>
<tr>
<td>OST 236</td>
<td>Advanced Word/Information Processing</td>
<td>3</td>
</tr>
<tr>
<td>OST 241</td>
<td>Medical Office Transcription I</td>
<td>3</td>
</tr>
<tr>
<td>OST 243</td>
<td>Medical Office Simulation</td>
<td>3</td>
</tr>
<tr>
<td>OST 286</td>
<td>Professional Development</td>
<td>3</td>
</tr>
<tr>
<td>OST 297</td>
<td>Seminar in Office Presentations</td>
<td>2</td>
</tr>
</tbody>
</table>

**Office Systems Technology Elective**

Select one course from the following courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>COE 111</td>
<td>Co-op Work Experience I</td>
<td>1</td>
</tr>
<tr>
<td>COE 112</td>
<td>Co-op Work Experience II</td>
<td>2</td>
</tr>
<tr>
<td>COE 121</td>
<td>Co-op Work Experience III</td>
<td>1</td>
</tr>
</tbody>
</table>

**Graduation Requirements**

**73 Credit Hours**

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#### MEDICAL OFFICE ADMINISTRATION: MEDICAL BILLING AND CODING — C25310B

**-Evening Only**

The Medical Billing and Coding certificate program prepares individuals for positions in medical and allied health facilities requiring a comprehensive knowledge of ICD-9 and CPT codes and computerized billing software. This concentrated program provides training in medical terminology, word processing, records management, computer basics, and customer service. Employment opportunities include hospitals, medical offices, research facilities, health insurance companies, billing agencies, and allied health facilities.

**General Education Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>C 111</td>
<td>Basic PC Literacy</td>
<td>2</td>
</tr>
<tr>
<td>OST 136</td>
<td>Word Processing</td>
<td>2</td>
</tr>
<tr>
<td>OST 141</td>
<td>Medical Terms I-Medical Office</td>
<td>3</td>
</tr>
<tr>
<td>OST 142</td>
<td>Medical Terms II-Medical Office</td>
<td>3</td>
</tr>
<tr>
<td>OST 156</td>
<td>Text Editing Applications</td>
<td>3</td>
</tr>
<tr>
<td>OST 184</td>
<td>Records Management</td>
<td>2</td>
</tr>
<tr>
<td>OST 188</td>
<td>Issues in Office Technology</td>
<td>2</td>
</tr>
</tbody>
</table>

**Office Systems Technology Elective**

Select one course from the following courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>OST 184</td>
<td>Medical Office Transcription I</td>
<td>2</td>
</tr>
<tr>
<td>OST 241</td>
<td>Medical Office Transcription II</td>
<td>2</td>
</tr>
<tr>
<td>OST 243</td>
<td>Medical Office Simulation</td>
<td>3</td>
</tr>
<tr>
<td>OST 286</td>
<td>Professional Development</td>
<td>3</td>
</tr>
<tr>
<td>OST 297</td>
<td>Seminar in Office Presentations</td>
<td>2</td>
</tr>
</tbody>
</table>

**Graduation Requirements**

**18 Credit Hours**

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2008-2009   | Wake Technical Community College
MEDICAL OFFICE ADMINISTRATION: MEDICAL TRANSCRIPTION SPECIALIST — C25310C

- Evening Only

The Medical Transcription Specialist certificate program is designed to prepare students to produce accurate medical documents from audio recordings. This concentrated program provides training in keyboarding, transcription, proofreading, editing, and medical terminology. Employment opportunities include positions in medical offices, hospitals, private transcription businesses, and home offices.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>OST 134</td>
<td>Text Entry and Formatting</td>
<td>3</td>
</tr>
<tr>
<td>OST 141</td>
<td>Medical Terms I – Medical Office</td>
<td>3</td>
</tr>
<tr>
<td>OST 142</td>
<td>Medical Terms II – Medical Office</td>
<td>3</td>
</tr>
<tr>
<td>OST 164</td>
<td>Text Editing Applications</td>
<td>3</td>
</tr>
<tr>
<td>OST 241</td>
<td>Medical Office Transcription I</td>
<td>2</td>
</tr>
<tr>
<td>OST 242</td>
<td>Medical Office Transcription II</td>
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</tbody>
</table>

Completion Requirements .................................. 16 Credit Hours

REAL ESTATE LICENSING — C25480

- Evening Only

The Real Estate Licensing curriculum provides licensing education required by the North Carolina Real Estate Commission for students preparing to take the real estate license examination and for provisional brokers who are seeking removal of the provisional status.

Course work includes the practices and principles of real estate, broker relationships as they apply to customers, sellers and buyers, contract procedures, fair housing and real estate methodology. Course work also includes professional development opportunities.

Graduates who have passed the real estate license examination and obtained a real estate provisional broker license should then qualify for removal of the provisional status and be able to provide basic, residential real estate services as a broker affiliated with a real estate brokerage firm.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BUS 121</td>
<td>Business Math</td>
<td>3</td>
</tr>
<tr>
<td>RLS 112</td>
<td>Fundamentals Of Real Estate</td>
<td>5</td>
</tr>
<tr>
<td>RLS 121</td>
<td>Broker Relationships</td>
<td>2</td>
</tr>
<tr>
<td>RLS 122</td>
<td>Contracts and Closing</td>
<td>2</td>
</tr>
<tr>
<td>RLS 123</td>
<td>Select Real Estate Issues</td>
<td>2</td>
</tr>
</tbody>
</table>

Completion Requirements .................................. 14 Credit Hours

REAL ESTATE APPRAISAL — C25420A

- Evening Only

The Real Estate Appraisal curriculum is designed to prepare individuals to enter the appraisal profession as a registered trainee and advance to licensed or certified appraiser levels.

Course work includes appraisal theory and concepts with applications, the North Carolina Appraisers Act, North Carolina Appraisal Board rules, and the Uniform Standards of Professional Appraisal Practice.

Graduates should be prepared to complete the North Carolina Registered Trainee Examinations and advance to licensure or certification levels as requirements are met.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>REA 111</td>
<td>Introduction to Real Estate Appraisal R-1</td>
<td>2</td>
</tr>
<tr>
<td>REA 112</td>
<td>Valuation Principles and Practices R-2</td>
<td>2</td>
</tr>
<tr>
<td>REA 113</td>
<td>Applied Residential Property Valuation R-3</td>
<td>1</td>
</tr>
<tr>
<td>REA 114</td>
<td>USPAP R-4</td>
<td>1</td>
</tr>
<tr>
<td>REA 210</td>
<td>Introduction to Income Property Appraisal G-1</td>
<td>2</td>
</tr>
<tr>
<td>REA 212</td>
<td>Advanced Income Capital Procedures G-2</td>
<td>2</td>
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<tr>
<td>REA 213</td>
<td>Applied Income Property Valuation G-3</td>
<td>2</td>
</tr>
</tbody>
</table>

Completion Requirements .................................. 12 Credit Hours

Real Estate

REAL ESTATE LICENSING — C25480

- Evening Only

The Real Estate Licensing curriculum provides licensing education required by the North Carolina Real Estate Commission for students preparing to take the real estate license examination and for provisional brokers who are seeking removal of the provisional status.

Course work includes the practices and principles of real estate, broker relationships as they apply to customers, sellers and buyers, contract procedures, fair housing and real estate methodology. Course work also includes professional development opportunities.

Graduates who have passed the real estate license examination and obtained a real estate provisional broker license should then qualify for removal of the provisional status and be able to provide basic, residential real estate services as a broker affiliated with a real estate brokerage firm.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BUS 121</td>
<td>Business Math</td>
<td>3</td>
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<tr>
<td>RLS 112</td>
<td>Fundamentals Of Real Estate</td>
<td>5</td>
</tr>
<tr>
<td>RLS 121</td>
<td>Broker Relationships</td>
<td>2</td>
</tr>
<tr>
<td>RLS 122</td>
<td>Contracts and Closing</td>
<td>2</td>
</tr>
<tr>
<td>RLS 123</td>
<td>Select Real Estate Issues</td>
<td>2</td>
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</tbody>
</table>

Completion Requirements .................................. 14 Credit Hours

REAL ESTATE APPRAISAL — C25420A

- Evening Only

The Real Estate Appraisal curriculum is designed to prepare individuals to enter the appraisal profession as a registered trainee and advance to licensed or certified appraiser levels.

Course work includes appraisal theory and concepts with applications, the North Carolina Appraisers Act, North Carolina Appraisal Board rules, and the Uniform Standards of Professional Appraisal Practice.

Graduates should be prepared to complete the North Carolina Registered Trainee Examinations and advance to licensure or certification levels as requirements are met.

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>REA 111</td>
<td>Introduction to Real Estate Appraisal R-1</td>
<td>2</td>
</tr>
<tr>
<td>REA 112</td>
<td>Valuation Principles and Practices R-2</td>
<td>2</td>
</tr>
<tr>
<td>REA 113</td>
<td>Applied Residential Property Valuation R-3</td>
<td>1</td>
</tr>
<tr>
<td>REA 114</td>
<td>USPAP R-4</td>
<td>1</td>
</tr>
<tr>
<td>REA 210</td>
<td>Introduction to Income Property Appraisal G-1</td>
<td>2</td>
</tr>
<tr>
<td>REA 212</td>
<td>Advanced Income Capital Procedures G-2</td>
<td>2</td>
</tr>
<tr>
<td>REA 213</td>
<td>Applied Income Property Valuation G-3</td>
<td>2</td>
</tr>
</tbody>
</table>

Completion Requirements .................................. 12 Credit Hours

REAL ESTATE LICENSING — C25480

- Evening Only

The Real Estate Licensing curriculum provides licensing education required by the North Carolina Real Estate Commission for students preparing to take the real estate license examination and for provisional brokers who are seeking removal of the provisional status.

Course work includes the practices and principles of real estate, broker relationships as they apply to customers, sellers and buyers, contract procedures, fair housing and real estate methodology. Course work also includes professional development opportunities.

Graduates who have passed the real estate license examination and obtained a real estate provisional broker license should then qualify for removal of the provisional status and be able to provide basic, residential real estate services as a broker affiliated with a real estate brokerage firm.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 121</td>
<td>Business Math</td>
<td>3</td>
</tr>
<tr>
<td>RLS 112</td>
<td>Fundamentals Of Real Estate</td>
<td>5</td>
</tr>
<tr>
<td>RLS 121</td>
<td>Broker Relationships</td>
<td>2</td>
</tr>
<tr>
<td>RLS 122</td>
<td>Contracts and Closing</td>
<td>2</td>
</tr>
<tr>
<td>RLS 123</td>
<td>Select Real Estate Issues</td>
<td>2</td>
</tr>
</tbody>
</table>

Completion Requirements .................................. 14 Credit Hours

REAL ESTATE APPRAISAL — C25420A

- Evening Only

The Real Estate Appraisal curriculum is designed to prepare individuals to enter the appraisal profession as a registered trainee and advance to licensed or certified appraiser levels.

Course work includes appraisal theory and concepts with applications, the North Carolina Appraisers Act, North Carolina Appraisal Board rules, and the Uniform Standards of Professional Appraisal Practice.

Graduates should be prepared to complete the North Carolina Registered Trainee Examinations and advance to licensure or certification levels as requirements are met.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>REA 111</td>
<td>Introduction to Real Estate Appraisal R-1</td>
<td>2</td>
</tr>
<tr>
<td>REA 112</td>
<td>Valuation Principles and Practices R-2</td>
<td>2</td>
</tr>
<tr>
<td>REA 113</td>
<td>Applied Residential Property Valuation R-3</td>
<td>1</td>
</tr>
<tr>
<td>REA 114</td>
<td>USPAP R-4</td>
<td>1</td>
</tr>
<tr>
<td>REA 210</td>
<td>Introduction to Income Property Appraisal G-1</td>
<td>2</td>
</tr>
<tr>
<td>REA 212</td>
<td>Advanced Income Capital Procedures G-2</td>
<td>2</td>
</tr>
<tr>
<td>REA 213</td>
<td>Applied Income Property Valuation G-3</td>
<td>2</td>
</tr>
</tbody>
</table>

Completion Requirements .................................. 12 Credit Hours
# Associate In Arts (A.A.) Degree — A10100

## Official Curriculum Schedule

<table>
<thead>
<tr>
<th>COURSE REQUIREMENTS</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition</td>
<td>6</td>
</tr>
<tr>
<td>ENG 111</td>
<td></td>
</tr>
<tr>
<td>ENG 112 or ENG 113 or ENG 114</td>
<td></td>
</tr>
<tr>
<td>Humanities/Fine Arts</td>
<td>12</td>
</tr>
<tr>
<td>Select 4 courses from at least 3 discipline areas. At least 1 literature course is required.</td>
<td></td>
</tr>
<tr>
<td><em>HUM 220 is required.</em></td>
<td></td>
</tr>
<tr>
<td>ART 111, 114, 115, 116, 117</td>
<td></td>
</tr>
<tr>
<td>COM 110, 120, 231</td>
<td></td>
</tr>
<tr>
<td>DRA 111, 112, 115, 122, 126</td>
<td></td>
</tr>
<tr>
<td>ENG 131, 231, 232, 241, 242, 261, 262</td>
<td></td>
</tr>
<tr>
<td>FRE 111 (and 181), 112 (and 182), 211 (and 281), 212 (and 282)</td>
<td></td>
</tr>
<tr>
<td>HUM 110, 115, 122, 130, 160, 211, 212, 220</td>
<td></td>
</tr>
<tr>
<td>MUS 110, 112, 113, 114, 213</td>
<td></td>
</tr>
<tr>
<td>PHI 210, 215, 220, 221, 240</td>
<td></td>
</tr>
<tr>
<td>REL 110, 111, 112, 211, 212</td>
<td></td>
</tr>
<tr>
<td>SPA 111 (and 181), 112 (and 182), 211 (and 281), 212 (and 282)</td>
<td></td>
</tr>
<tr>
<td>Social/Behavioral Sciences</td>
<td>12</td>
</tr>
<tr>
<td>Select 4 courses from at least 3 discipline areas. At least 1 history course is required.</td>
<td></td>
</tr>
<tr>
<td>ANT 210, 220, 221, 230 (and 230A), 240</td>
<td></td>
</tr>
<tr>
<td>ECO 151, 251, 252</td>
<td></td>
</tr>
<tr>
<td>GEO 111, 112</td>
<td></td>
</tr>
<tr>
<td>HIS 111, 112, 121, 122, 131, 132</td>
<td></td>
</tr>
<tr>
<td>POL 110, 120, 210</td>
<td></td>
</tr>
<tr>
<td>PSY 150, 237, 239, 241, 281</td>
<td></td>
</tr>
<tr>
<td>SOC 210, 213, 220, 225, 230</td>
<td></td>
</tr>
<tr>
<td>Natural Sciences</td>
<td>8</td>
</tr>
<tr>
<td>Select from the following list. (If you select BIO 110, you may not select BIO 111 or BIO 112.)</td>
<td></td>
</tr>
<tr>
<td>MAT 140 (and 140A)</td>
<td></td>
</tr>
<tr>
<td>MAT 161 (and 161A)</td>
<td></td>
</tr>
<tr>
<td>MAT 171 (and 171A)</td>
<td></td>
</tr>
<tr>
<td>B. Select 1 course (and lab) from the following list. (If MAT 161 was selected from List A, then MAT 171 or MAT 175 may not be selected; if MAT 171 was selected from List A, then MAT 161 or MAT 175 may not be selected.)</td>
<td></td>
</tr>
<tr>
<td>MAT 151 (and 151A)</td>
<td></td>
</tr>
<tr>
<td>MAT 155 (and 155A)</td>
<td></td>
</tr>
<tr>
<td>MAT 161 (and 161A)</td>
<td></td>
</tr>
<tr>
<td>MAT 165 (and 165A)</td>
<td></td>
</tr>
<tr>
<td>MAT 171 (and 171A)</td>
<td></td>
</tr>
<tr>
<td>MAT 172 (and 172A)</td>
<td></td>
</tr>
<tr>
<td>MAT 175 (and 175A)</td>
<td></td>
</tr>
<tr>
<td>MAT 263 (and 263A)</td>
<td></td>
</tr>
<tr>
<td>MAT 271</td>
<td></td>
</tr>
<tr>
<td>MAT 272</td>
<td></td>
</tr>
<tr>
<td>MAT 273</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>18-19</td>
</tr>
<tr>
<td>Select from entire list of courses below.</td>
<td></td>
</tr>
<tr>
<td>Graduation Requirements</td>
<td>64 Credit Hours</td>
</tr>
</tbody>
</table>

## Course List

### Associate in Arts (A.A.) - A10100

### Associate In Science (A.S.)

#### Official Curriculum Schedule

<table>
<thead>
<tr>
<th>COURSE REQUIREMENTS</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Composition</strong></td>
<td>6</td>
</tr>
<tr>
<td>ENG 111</td>
<td></td>
</tr>
<tr>
<td>ENG 112 or ENG 113 or ENG 114</td>
<td></td>
</tr>
<tr>
<td><strong>Humanities/Fine Arts</strong></td>
<td>9</td>
</tr>
<tr>
<td>Select 3 courses from 3 discipline areas. One literature course is required.</td>
<td></td>
</tr>
<tr>
<td><strong>Social/Behavioral Sciences</strong></td>
<td>9</td>
</tr>
<tr>
<td>Select 3 courses from 3 discipline areas. One history course is required.</td>
<td></td>
</tr>
<tr>
<td><strong>Natural Sciences</strong></td>
<td>8</td>
</tr>
<tr>
<td>Select from the following list. If you select BIO 110, you may not select BIO 111 or BIO 112.</td>
<td></td>
</tr>
<tr>
<td><strong>Mathematics</strong></td>
<td>7-8</td>
</tr>
<tr>
<td>A. Select 1 course (and lab) from the following list.</td>
<td></td>
</tr>
<tr>
<td>MAT 140 (and 140A)</td>
<td></td>
</tr>
<tr>
<td>MAT 161 (and 161A)</td>
<td></td>
</tr>
<tr>
<td>MAT 171 (and 171A)</td>
<td></td>
</tr>
<tr>
<td>B. Select 1 course (and lab) from the following list. (If MAT 161 was selected from List A, then MAT 171 or MAT 175 may not be selected; if MAT 171 was selected from List A, then MAT 161 or MAT 175 may not be selected.)</td>
<td></td>
</tr>
<tr>
<td>MAT 151 (and 151A)</td>
<td></td>
</tr>
<tr>
<td>MAT 155 (and 155A)</td>
<td></td>
</tr>
<tr>
<td>MAT 161 (and 161A)</td>
<td></td>
</tr>
<tr>
<td>MAT 165 (and 165A)</td>
<td></td>
</tr>
<tr>
<td>MAT 171 (and 171A)</td>
<td></td>
</tr>
<tr>
<td>MAT 172 (and 172A)</td>
<td></td>
</tr>
<tr>
<td>MAT 175 (and 175A)</td>
<td></td>
</tr>
<tr>
<td>MAT 263 (and 263A)</td>
<td></td>
</tr>
<tr>
<td>MAT 271</td>
<td></td>
</tr>
<tr>
<td>MAT 272</td>
<td></td>
</tr>
<tr>
<td>MAT 273</td>
<td></td>
</tr>
</tbody>
</table>

General Education Core Requirements.............44 Credit Hours

### Associate In Science Degree (A.S.)

#### Official Curriculum Schedule

<table>
<thead>
<tr>
<th>COURSE REQUIREMENTS</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Composition</strong></td>
<td>6</td>
</tr>
<tr>
<td>ENG 111</td>
<td></td>
</tr>
<tr>
<td>ENG 112 or ENG 113 or ENG 114</td>
<td></td>
</tr>
<tr>
<td><strong>Humanities/Fine Arts</strong></td>
<td>9</td>
</tr>
<tr>
<td>Select 3 courses from 3 discipline areas. One literature course is required; select from the following: ENG 131, 231, 232, 241, 242, 261, 262.</td>
<td></td>
</tr>
<tr>
<td><strong>Social/Behavioral Sciences</strong></td>
<td>9</td>
</tr>
<tr>
<td>Select 3 courses from 3 discipline areas. One history course is required; select from the following: HIS 111, 112, 121, 122, 131, 132.</td>
<td></td>
</tr>
<tr>
<td><strong>Natural Sciences</strong></td>
<td>8</td>
</tr>
<tr>
<td>Select one of the following sequences. BIO 111 and 112, CHM 151 and 152, PHY 151 and 152, PHY 251 and 252.</td>
<td></td>
</tr>
<tr>
<td><strong>Mathematics</strong></td>
<td>6</td>
</tr>
<tr>
<td>MAT 171 (and 171A), 172 (and 172A)</td>
<td></td>
</tr>
<tr>
<td>Higher mathematics courses may be substituted if placement warrants.</td>
<td></td>
</tr>
<tr>
<td><strong>Additional Natural Sciences/Mathematics</strong></td>
<td>6</td>
</tr>
<tr>
<td>Select one of the following sequences. BIO 111, 111A, 151, 151A, 152, 152A, BIO 110, 111, 112, 120, 130, 140, 140A (You may not select both BIO 110 and BIO 111)</td>
<td></td>
</tr>
<tr>
<td>CHM 151, 152</td>
<td></td>
</tr>
</tbody>
</table>
GEL 111, 113, 120, 230
MAT 151 (and 151A) or 155 (and 155A), 175 (and 175A), 271, 272, 273 (You may not select both MAT 151/151A and MAT 155/155A.)
PHY 151, 152, 251, 252 (You may not select both PHY 151/152 and PHY 251/252.)

Mathematics, Natural Sciences, or Computer Science
Electives.........................................................14
A minimum of 14 hours in mathematics, natural sciences, or computer sciences is required

AST 111, 111A, 151, 151A, 152, 152A
BIO 110, 111, 112, 120, 130, 140, 140A, 145, 150, 168, 169, 230, 231, 232, 242, 243, 250, 275 (You may not select both BIO 110 and BIO 111.)
CHM 151, 152, 251, 252, 261
CIS 110, 115
CSC 120, 130, 134, 136, 139, 151, 239
GEL 111, 113, 120, 230
MAT 151 (and 151A) or 155 (and 155A), 167 (and 167A), 175 (and 175A), 271, 272, 273, 280, 285 (You may not select both MAT 151/151A and MAT 155/155A.)
PHY 151, 152, 251, 252 (You may not select both PHY 151/152 and PHY 251/252.)

Other Electives.............................................6
Select from A.S. Course List.

Graduation Requirements.....................................64 Credit Hours

COURSE LIST
ASSOCIATE IN SCIENCE (A.S.) — A10400

ACA 115 / ACC 120, 121/ ANT 210, 220, 221, 230, 230A, 240/
ART 111, 113, 114, 115, 116, 117, 121, 122, 130, 131, 132, 140,
240, 244, 281 / AST 111, 111A, 151, 151A, 152, 152A / BIO 110,
111, 112, 120, 130, 140, 140A, 168, 169, 275 / BUS 110, 115, 137/
CHM 151, 152, 251, 252, 261 / CIS 110, 115 / CJC 111, 112, 141/
COE 111 / COM 110, 111, 112, 120, 130, 231, 232, 233, 251 / CSC 120,
130, 134, 136, 139, 151, 239 / DFT 170 / DRA 111, 112, 115, 120,
122, 124, 126, 128, 130, 131, 140, 141 / ECO 151, 251, 252 / EDU
216 / EGR 150, 210, 211, 212, 213, 220, 225, 228, 230 / ENG
111A, 113, 114, 125, 126, 131, 231, 232, 241, 242, 253, 261,
262, 271, 272, 273, 274, 275 / FRE 111 (and 181), 112 and (182),
141, 151, 161, 211 (and 281) 212 (and 282) / GEL 111, 113, 120,
230 / GEO 111, 112/
HEA 110, 112 / HIS 111, 112, 117, 121, 122, 131, 132, 161,
162, 167, 216, 221, 222, 223, 226, 236, 251, 252 / HUM 110, 115,
130, 160, 161, 170, 211, 212, 220, 230 / JOU 110 / MAT 141 (and
141A), 142 (and 142A), 151 (and 151A), 155 (and 155A), 167 (and
167A), 171A, 172A, 175 (and 175A), 271, 272, 273, 280, 285/
MUS 110, 111, 112, 113, 141, 132, 141, 142, 151, 161, 210,
212, 213, 214, 231, 232 / PED 110, 121, 128, 130, 138, 139, 143,
175, 176, 177 / PHI 210, 215, 220, 221, 230, 240 / PHY 151, 152,
153, 251, 252 / POL 110, 120, 130, 210 / PSY
150, 237, 239, 241, 246, 259, 263, 281 / REL 110, 111,
112, 211, 212 / SOC 210, 213, 220, 225, 242, 252 / SPA
111 (and 181), 112 (and 182), 141, 151, 161, 211 (and
281), 212 (and 282), 221

TRANSFER CORE DIPLOMA (SCIENCE) — D10400

OFFICIAL CURRICULUM SCHEDULE

COURSE REQUIREMENTS CREDIT HOURS

Composition....................................................6
ENG 111
ENG 112 or ENG 113 or ENG 114

Humanities/Fine Arts........................................9
Three (3) courses from three (3) discipline areas are required.

One (1) literature course is required; select from the following:
ENG 131, 231, 241, 242, 261, 262

Select two (2) additional courses from two of the following discipline areas:
ART 111, 114, 115, 116, 117
COM 110, 120, 231
DRA 111, 112, 115, 122, 126
FRE 111 (and 181)
HUM 110, 115, 130, 160, 211, 212, 220
MUS 110, 112, 113, 213
PHI 210, 215, 220, 221, 240
REL 110, 111, 112, 211, 212
SPA 111 (and 181)

Social/Behavioral Sciences..................................9
Three (3) courses from three (3) discipline areas are required.

One (1) history course is required; select from the following:
HIS 111, 112, 121, 122, 131, 132

Select two (2) additional courses from two (2) of the following discipline areas:
ANT 210
ECO 251, 252
GEO 111, 112
POL 110, 120, 210
PSY 150
SOC 210, 213, 220, 225

Natural Sciences.............................................8
Select one (1) of the following two-course sequences:
BIO 111 and 112
CHM 151 and 152
PHY 151 and 152
PHY 251 and 252

Mathematics....................................................6
MAT 171 (and 171A, 172 (and 172A)
Higher mathematics courses may be substituted if placement warrants.

Additional Natural Sciences/ Mathematics Requirements.......6
AST 111, 111A, 151, 151A, 152, 152A
BIO 110, 111, 112, 120, 130, 140, 140A (You may not select both
BIO 110 and BIO 111)
CHM 151, 152
GEL 111, 113, 120, 230
MAT 151/151A or 155 (155A), 175 (175A), 271, 272, 273 (You may
not select both MAT 151/151A and MAT 155/155A)
PHY 151, 152, 252 (You may not select both PHY 151/152 and PHY
251/252)

General Education Core Requirements........................44 Credit Hours
## Associate In Science (A.S.)

**DEGREE — Pre-Major: Engineering — A1040D**

### OFFICIAL CURRICULUM SCHEDULE

<table>
<thead>
<tr>
<th>COURSE REQUIREMENTS</th>
<th>CREDIT HOURS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Composition</strong></td>
<td>6</td>
</tr>
<tr>
<td>ENG 111</td>
<td></td>
</tr>
<tr>
<td>or ENG 113 or ENG 114</td>
<td></td>
</tr>
<tr>
<td><strong>Humanities/Fine Arts</strong></td>
<td>9</td>
</tr>
<tr>
<td>Select 3 courses from 3 discipline areas. One literature course is required; select from the following: ENG 131, 231, 232, 241, 242, 261, 262. Select 2 additional courses from 2 of the following discipline areas: ART 111, 114, 115, 116, 117 COM 110, 120, 231 DRA 111, 112, 115, 122, 126 FRE 111 (and 181) HUM 110, 115, 130, 160, 211, 212, 220 MUS 110, 112, 113, 114, 213 PHI 210, 215, 220, 221, 240 REL 110, 111, 112, 211, 212 SPA 111 (and 181)</td>
<td></td>
</tr>
<tr>
<td><strong>Social/Behavioral Sciences</strong></td>
<td>9</td>
</tr>
<tr>
<td>Select 3 courses from 3 discipline areas. One history course is required; select from the following: HIS 111, 112, 121, 122, 131, 132. Select 2 additional courses from two of the following discipline areas: ANT 210 ECO 251, 252 (One ECO course is recommended.) GEO 111, 112 POL 110, 120, 210 PSY 150 SOC 210, 213, 220, 225</td>
<td></td>
</tr>
<tr>
<td><strong>Natural Sciences</strong></td>
<td>12</td>
</tr>
<tr>
<td>The following courses are required: CHM 151 PHY 251 PHY 252</td>
<td></td>
</tr>
<tr>
<td><strong>Mathematics</strong></td>
<td>8</td>
</tr>
<tr>
<td>The following courses are required: MAT 271 and MAT 272</td>
<td></td>
</tr>
<tr>
<td><strong>Other Required Hours</strong></td>
<td>20-21</td>
</tr>
<tr>
<td>MAT 273 and MAT 285 One of the following courses is required: CSC 134 or CSC 136 or CSC 151 Students must select one of the following courses: CHM 152 or DFT 170 or EGR 220 Note: If CHM 152 is not selected, then a minimum of 4 additional credit hours in Mathematics, Natural Sciences, or Computer Sciences is also required. An additional 7 hours of approved college transfer courses are required. Choose from the following: ACA 115/ ACC 120, 121/ ANT 210, 220, 221, 230, 230A, 240/ ART 111, 113, 114, 115, 116, 117, 121, 122, 130, 131, 132, 140, 240, 244, 281/ AST 111, 111A, 151, 151A, 152, 152A/ BIO 111, 112, 120, 130, 140, 140A, 168, 169, 275/ BUS 110, 115, 137/ CHM 152, 251, 252, 261/ CIS 110, 115/ CJC 111/ COE 111/ COM 110, 111, 120, 130, 231, 232, 233, 251/ CSC 120, 130, 134, 136, 139, 151, 239/ DFT 170/ DRA 111, 112, 115, 120, 122, 124, 126, 128, 130, 131, 140, 141/ ECO 251, 252/ EDU 216/ EGR 150, 210, 211, 212, 213, 220, 225, 228, 230/ ENG 111A, 125, 126, 131, 231, 232, 234, 241, 242, 253, 261, 262, 271, 272, 273, 274, 275/ FRE 111 (and 181), 112 and (182), 211 (and 281) 212 (and 282)/ GEL 113, 120, 230/ GEO 111, 112/ HEA 110, 112/ HIS 111, 112, 117, 121, 131, 132, 161, 162, 167, 216, 221, 222, 223, 226, 236, 251, 252/ HUM 110, 115, 130, 160, 161, 170, 211, 212, 220, 230/ JOU 110/ MAT 151 (and 151A) or 155 (and 155A), 167, 280/ MUS 110, 111, 112, 131, 132/ PED 110, 121, 128, 130, 138, 139, 143, 175, 176, 177/ PHI 210, 215, 220, 221, 230, 240/ POL 110, 120, 130, 210/ PSY 150, 237, 239, 241, 246, 259, 263, 281/ REL 110, 111, 112, 211, 212/ SOC 210, 213, 220, 225, 242, 252/ SPA 111 (and 181), 112 (and 182), 211 (and 281), 212 (and 282)</td>
<td></td>
</tr>
<tr>
<td>Graduation Requirements</td>
<td>64-65 Credit Hours</td>
</tr>
</tbody>
</table>

Wake Technical Community College | www.waketech.edu
Computer & Engineering Technologies

Dean Robert H. “Butch” Grove
Phone: 919-866-5394
Email: rhgrove@waketech.edu

DEGREES
Advertising and Graphic Design  A30100
Architectural Technology  A40100
BioPharmaceutical Technology  A20180
Civil Engineering Technology  A40140
Computer Engineering Technology  A40160
Computer Information Technology  A25260
Computer Programming  A25130
Database Management  A25150
Electronics Engineering Technology  A40200
Environmental Science Technology  A20140
Industrial Engineering Technology  A40240
Information Systems Security  A25270
Landscape Architecture Technology  A40260
Mechanical Engineering Technology  A40320
Networking Technology  A25340
Pre-Engineering A1040D (see College/University Transfer)
Simulation and Game Development  A25450
Surveying Technology  A40380
Web Technologies  A25290

DIPLOMAS
Simulation and Game Development  D25450A
Simulation and Game Development: Modeling and Design  D25450B

CERTIFICATES
Advertising and Graphic Design:
  Graphics and Design  C30100A
  Web and Graphic Design  C30100B
  Digital Media  C30100C
Architectural Technology:
  Architectural CAD  C40100A
Civil Engineering Technology:
  Civil Design  C40140A
Computer Engineering Technology:
  C-Programming: Open Source Development  C40160B

Computer Information Technology:
  Computer Forensics  C25260J
  Hardware Troubleshooting  C25260G
  IT Support Management  C25260L
  IT Foundations  C25260M
  IT Support Technician  C25260K
  Microsoft Office Specialist (MCAS)  C25260A
  Spreadsheet Specialist  C25260E

Computer Programming:
  C++ Programming  C25130C
  Computer Science  C25130E
  JAVA Programming  C25130A
  Visual BASIC Programming  C25130B
  Visual C# Programming  C25130D

Database Management:
  MySQL Developer  C25150C
  Oracle DBA Programming  C25150B
  Oracle Developer  C25150A

Electronics Engineering Technology:
  Basic Electronics  C40200A
  PLC Programming  C40200B
  Robotics  C40200C

High Performance Computing:
  Bioinformatics Computing  C25230B
  Linux/Red Hat Administration  C25230C
Industrial Engineering Technology:
   Advanced Quality C40240C
   Industrial Management C40240A
   Quality Assurance C40240B
   Manufacturing Process Control C40240D
Information Systems Security:
   Network Security Admin. C25270A
Landscape Architecture Technology:
   Landscape Architecture C40260A
Mechanical Engineering Technology:
   Mechanical Design C40320B
   Thermal Mechanics C40320C
   Materials Engineering C40320D
   Engineering Management C40320E
   Engineering Fundamentals C40320F
Networking Technology:
   Cisco Certified Network Associate (CCNA) C25340C
   Cisco Certified Network Professional (CCNP) C25340I
   Microsoft Certified Systems Administrator (MCSA) C25340J
Simulation and Game Development
   Modeling and Animation C25450A
   Production C25450B
Web Technologies:
   E-Commerce Programming C25290B
   Web Designer C25290C
   Web Developer C25290A

COLLABORATIVE AGREEMENTS
Civil and Surveying Technology: GIS/GPS – Geographic Information Science – C40220-C1
   -- Collaborative with Central Piedmont Community College
Simulation and Game Development
   -- Level III Instruction Service Agreement with Pitt Community College, Nash Community College, Surry Community College, Wayne Community College, and Fayetteville Technical Community College
Advertising & Graphic Design

The Advertising and Graphic Design curriculum is designed to provide students with knowledge and skills necessary for employment in the graphic design profession that emphasizes design, advertising, illustration, and digital and multimedia preparation of printed and electronic promotional materials.

Students will be trained in the development of concept and design for promotional materials, such as newspaper and magazine advertisements, posters, folders, letterheads, corporate symbols, brochures, booklets, preparation of art for printing, lettering and typography, photography, and electronic media.

Graduates should qualify for employment opportunities with graphic design studios, advertising agencies, printing companies, department stores, and a wide variety of manufacturing industries, newspapers, and businesses with in-house graphics operations.

ADVERTISING AND GRAPHIC DESIGN — A30100

General Education Courses
ENG 111 Expository Writing............................................... 3
___ ___ Communication Elective.............................................. 3
___ ___ Humanities/Fine Arts Elective................................. 3
___ ___ Math Elective............................................................ 3
___ ___ Social/Behavioral Science Elective............................ 3

Major Courses
GRD 110 Typography I ............................................................ 3
GRD 111 Typography II ......................................................... 3
GRD 121 Drawing Fundamentals I ........................................ 2
GRD 131 Illustration I ............................................................. 2
GRD 141 Graphic Design I .......................................................... 4
GRD 142 Graphic Design II ....................................................... 4
GRD 151 Computer Design Basics ........................................... 3
GRD 152 Computer Design Technology I ................................ 3
GRD 153 Computer Design Technology II ............................ 3
GRD 167 Photographic Imaging I ........................................... 3
GRD 241 Graphic Design III .................................................... 3
GRD 263 Illustrative Imaging ................................................... 3
GRD 285 Digital Print Production ............................................ 3
GRD 280 Portfolio Design ......................................................... 4
GRD 282 Advertising Copywriting ......................................... 2
GRD 285 Client/Media Relations ............................................. 2
WEB 140 Web Development Tools .......................................... 3

Major Electives List 1
Select 4.0 hours from the following courses
COE 113 Co-op Work Experience I ....................................... 3
GRD 168 Photographic Imaging II ......................................... 3
GRD 180 Interactive Design ................................................... 3
GRD 193 Selected Topics ....................................................... 3
GRD 230 Technical Illustration ............................................. 2
GRD 232 Fashion Illustration .................................................. 2
GRD 233 Product Illustration .................................................. 2
WEB 110 Internet/Web Fundamentals ....................................... 3
WEB 111 Introduction to Web Graphics ................................... 3
WEB 210 Web Design ............................................................ 3

Major Electives List 2
Select 2.0 hours from the following courses
ART 114 Art History Survey I ............................................... 3
CIS 110 Introduction to Computers ........................................ 3
GRD 156 Computer Design Apps I ......................................... 1
GRD 157 Computer Design Apps II ........................................ 1
GRD 158 Computer Design Apps III ....................................... 1
GRD 175 3-D Animation Design ............................................ 3
GRD 271 Multimedia Design I ............................................... 2
GRD 281 Design of Advertising .............................................. 2
GRD 292 Selected Topics ...................................................... 2
WEB 120 Introduction to Internet Multimedia ........................ 3
WEB 211 Advanced Web Graphics ......................................... 3

Graduation Requirements..................................................... 72 Credit Hours

Humanities/Fine Arts Elective
(Select 3.0 hours from the following courses)
HUM 110 Technology and Society ......................................... 3
HUM 115 Critical Thinking .................................................. 3
HUM 160 Introduction to Film ................................................. 3
HUM 230 Leadership Development ......................................... 3
ART 111 Art Appreciation .................................................... 3
ART 115 Art History Survey II .............................................. 3
ART 116 Survey of American Art ........................................... 3
ART 117 Non-Western Art History ......................................... 3

Mathematics Elective
(Select 3.0 hours from the following courses)
MAT 115 Mathematical Models ............................................. 3
MAT 145 Analytical Math ..................................................... 3
MAT 145A Analytical Math Lab ............................................. 1
MAT 161 College Algebra .................................................... 3
MAT 161A College Algebra Lab ............................................ 1
MAT 171 Pre-Calculus Algebra ............................................. 3
MAT 171A Pre-Calculus Algebra Lab ..................................... 1
MAT 121 Algebra/Trigonometry ............................................ 3

Communication Elective
(Select 3.0 hours from the following courses)
ENG 112 Argument-Based Research ....................................... 3
ENG 113 Literature-Based Research ....................................... 3
ENG 114 Prof. Research and Reporting ................................... 3
COM 120 Intro Interpersonal Communication ........................ 3
COM 231 Public Speaking .................................................... 3

Social/Behavioral Science Elective
(Select 3.0 hours from the following courses)
PSY 118 Interpersonal Psychology ......................................... 3
PSY 150 General Psychology ................................................ 3
SOC 210 Introduction to Sociology ....................................... 3
SOC 213 Sociology of the Family ........................................... 3
SOC 220 Social Problems ....................................................... 3
## ADVERTISING AND GRAPHIC DESIGN: GRAPHICS AND DESIGN — C30100A
- Online Only

The Graphics and Design certificate curriculum is designed to provide students with knowledge and skills necessary for employment in the graphic design profession. It emphasizes the use of typography and computer technology in design, advertising, illustration, and digital and multimedia preparation of printed and electronic promotional materials.

Students will be trained in the development of concept and design for promotional materials, such as newspapers and magazine advertisements, posters, folders, letterheads, corporate symbols, brochures, booklets, preparation of art for printing, lettering and typography, photography, and electronic media.

Graduates should qualify for employment opportunities with graphic design studios, advertising agencies, printing companies, department stores, and a wide variety of manufacturing industries, newspapers, and businesses with in-house graphics operations.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRD 110</td>
<td>Typography I</td>
<td>3</td>
</tr>
<tr>
<td>GRD 111</td>
<td>Typography II</td>
<td>3</td>
</tr>
<tr>
<td>GRD 151</td>
<td>Computer Design Basics</td>
<td>3</td>
</tr>
<tr>
<td>GRD 152</td>
<td>Computer Design Technology I</td>
<td>3</td>
</tr>
<tr>
<td>GRD 153</td>
<td>Computer Design Technology II</td>
<td>3</td>
</tr>
<tr>
<td>GRD 263</td>
<td>Illustrative Imaging</td>
<td>3</td>
</tr>
</tbody>
</table>

**Completion Requirements**
- 18 Credit Hours

### ADVERTISING AND GRAPHIC DESIGN: WEB AND GRAPHIC DESIGN — C30100B
- Online Only

The Web and Graphic Design certificate curriculum is designed to provide students with the knowledge and skills necessary for employment in the graphic design profession. It emphasizes design, advertising, illustration, and digital and multimedia preparation of electronic, especially Web-based, promotional materials.

Students will be trained in the use of typography, computer design, and Web development tools to develop concept and design for electronic media promotional materials.

Graduates should qualify for employment opportunities with graphic design studios, advertising agencies, printing companies, department stores, and a wide variety of manufacturing industries, newspapers, and businesses with in-house graphics operations.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRD 110</td>
<td>Typography I</td>
<td>3</td>
</tr>
<tr>
<td>GRD 151</td>
<td>Computer Design Basics</td>
<td>3</td>
</tr>
<tr>
<td>GRD 152</td>
<td>Computer Design Technology I</td>
<td>3</td>
</tr>
<tr>
<td>GRD 153</td>
<td>Computer Design Technology II</td>
<td>3</td>
</tr>
<tr>
<td>WEB 111</td>
<td>Introduction to Web Graphics</td>
<td>3</td>
</tr>
<tr>
<td>WEB 140</td>
<td>Web Development Tools</td>
<td>3</td>
</tr>
</tbody>
</table>

**Completion Requirements**
- 18 Credit Hours

### ADVERTISING AND GRAPHIC DESIGN: Digital Media- C30100C
- Day or Online

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRD 151</td>
<td>Computer Design Basics</td>
<td>3</td>
</tr>
<tr>
<td>GRD 152</td>
<td>Computer Design Tech I</td>
<td>3</td>
</tr>
<tr>
<td>GRD 175</td>
<td>3D Animation Design</td>
<td>3</td>
</tr>
<tr>
<td>WEB 111</td>
<td>Introduction to Web Graphics</td>
<td>3</td>
</tr>
<tr>
<td>WEB 120</td>
<td>Introduction to Internet Multimedia</td>
<td>3</td>
</tr>
</tbody>
</table>

**Completion Requirements**
- 15 Credit Hours

### Architectural Technology

The Architectural Technology curriculum provides individuals with knowledge and skills that can lead to employment in the field of architecture or one of the associated professions.

Students receive instruction in construction document preparation, materials and methods, environmental and structural systems, building codes and specifications, and computer applications as well as complete a design project. Optional courses may be provided to suit specific career needs.

Upon completion, graduates have career opportunities within the architectural, engineering, and construction professions as well as positions in industry and government.

### ARCHITECTURAL TECHNOLOGY — A40100

#### General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Professional Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>MAT 121</td>
<td>Algebra and Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Social/Behavioral Science Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Major Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 111</td>
<td>Introduction to Architectural Technology</td>
<td>3</td>
</tr>
<tr>
<td>ARC 112</td>
<td>Construction Materials and Methods</td>
<td>4</td>
</tr>
<tr>
<td>ARC 113</td>
<td>Residential Architectural Technology</td>
<td>3</td>
</tr>
<tr>
<td>ARC 114</td>
<td>Architectural CAD</td>
<td>2</td>
</tr>
<tr>
<td>ARC 114A</td>
<td>Architectural CAD Lab</td>
<td>1</td>
</tr>
<tr>
<td>ARC 131</td>
<td>Building Codes</td>
<td>3</td>
</tr>
<tr>
<td>ARC 211</td>
<td>Light Construction Technology</td>
<td>3</td>
</tr>
<tr>
<td>ARC 213</td>
<td>Design Project</td>
<td>3</td>
</tr>
<tr>
<td>ARC 220</td>
<td>Advanced Architectural CAD</td>
<td>2</td>
</tr>
<tr>
<td>ARC 230</td>
<td>Environmental Systems</td>
<td>4</td>
</tr>
<tr>
<td>ARC 240</td>
<td>Site Planning</td>
<td>3</td>
</tr>
<tr>
<td>ARC 250</td>
<td>Survey of Architecture</td>
<td>3</td>
</tr>
<tr>
<td>ARC 264</td>
<td>Digital Architecture</td>
<td>2</td>
</tr>
<tr>
<td>CIV 110</td>
<td>Statics/Strength of Materials</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Major Electives

Select 8 hours from the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC 212</td>
<td>Commercial Construction Technology</td>
<td>3</td>
</tr>
<tr>
<td>ARC 221</td>
<td>Architectural 3-D CAD</td>
<td>3</td>
</tr>
<tr>
<td>ARC 241</td>
<td>Contract Administration</td>
<td>2</td>
</tr>
<tr>
<td>ARC 261</td>
<td>Solar Technology</td>
<td>2</td>
</tr>
<tr>
<td>ARC 293</td>
<td>Selected Topics</td>
<td>3</td>
</tr>
<tr>
<td>CIV 125</td>
<td>Civil/Surveying CAD</td>
<td>3</td>
</tr>
<tr>
<td>CIV 230</td>
<td>Construction Estimating</td>
<td>3</td>
</tr>
<tr>
<td>EGR 115</td>
<td>Introduction to Technology</td>
<td>4</td>
</tr>
<tr>
<td>LAR 230</td>
<td>Principles of Horticulture I</td>
<td>4</td>
</tr>
<tr>
<td>LAR 231</td>
<td>Principles of Horticulture II</td>
<td>3</td>
</tr>
<tr>
<td>SRV 110</td>
<td>Surveying I</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Co-op Work Experience 1

Select 2 hours from the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COE 112</td>
<td>Co-op Work Experience I</td>
<td>2</td>
</tr>
<tr>
<td>COE 111</td>
<td>Co-op Work Experience I</td>
<td>1</td>
</tr>
<tr>
<td>COE 121</td>
<td>Co-op Work Experience II</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Co-op Work Experience 2

Select 2 hours from the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COE 122</td>
<td>Co-op Work Experience II</td>
<td>2</td>
</tr>
<tr>
<td>COE 131</td>
<td>Co-op Work Experience III</td>
<td>1</td>
</tr>
<tr>
<td>COE 211</td>
<td>Co-op Work Experience IV</td>
<td>1</td>
</tr>
</tbody>
</table>

**Graduation Requirements**
- 68 Credit Hours
**Biopharmaceutical Technology**

The BioPharmaceutical Technology curriculum is designed to prepare graduates for employment in pharmaceutical manufacturing and related industries, including chemical quality assurance, microbiological quality assurance, product inspection, documentation review, manufacturing, and product/process validation.

**BIOPHARMACEUTICAL TECHNOLOGY — A20180**

**General Education Courses**
- ENG 111 Expository Writing ................................. 3
- ENG 114 Professional Research and Reporting .......... 3
- MAT 121 Algebra/Trigonometry ............................ 3
- **Total General Education Courses** ....................... 9

**Major Courses**
- BIO 110 Principles of Biology ......................... 4
- BPM 110 BioProcess Practices ............................ 5
- CHM 131 Introduction to Chemistry ................... 4
- CHM 131A Introduction to Chemistry Lab ............... 1
- CHM 132 Organic and Biochemistry ............... 4
- EGR 115 Introduction to Technology .................. 3
- ENV 212 Instrumentation ............................... 4
- ISC 112 Industrial Safety ............................... 2
- PTC 110 Industrial Environment ..................... 3
- PTC 120 Pharmaceutical Quality Control ............. 4
- PTC 210 Pharmaceutical Industrial Processes ....... 4
- PTC 212 Applied Microbiology ....................... 4
- PTC 214 Parenteral Processes ......................... 4
- PTC 222 Pharmaceutical Process Control ............ 3
- PTC 225 Validation ....................................... 3
- PTC 228 Pharmaceutical Issues ...................... 1
- **Total Major Courses** ........................................... 44

**Graduation Requirements** ........................................... 73

**HUMANITIES/FINE ARTS ELECTIVE**

(Select 3.0 hours from the following courses)
- HUM 110 Technology and Society ................ 3
- HUM 115 Critical Thinking ......................... 3
- HUM 160 Introduction to Film ...................... 3
- HUM 230 Leadership Development ................. 3
- **Total Humanities/Fine Arts Elective** .............. 9

**SOCIAL/BEHAVIORAL SCIENCE ELECTIVE**

(Select 3.0 hours from the following courses)
- PSY 118 Interpersonal Psychology .................. 3
- SOC 210 Introduction to Sociology ................. 3
- **Total Social/Behavioral Science Elective** ....... 6

**Civil Engineering Technology**

The Civil Engineering Technology curriculum provides the application of relevant theory of engineering needed by technicians to carry out planning and supervisory tasks in the construction of transportation systems, residential and commercial buildings, bridges, dams, and water and wastewater treatment systems.

Course work includes the communication and computational skills required to support the fields such as materials testing, structures, estimating, project management, hydraulics, environmental technology, and surveying. Additional course work will cover the operation of computers and application software including computer-aided drafting.

Graduates should qualify for technician-level jobs with both public and private engineering, construction, and surveying agencies and are also eligible to continue on at East Carolina University and UNC-Charlotte as a junior.
CIVIL ENGINEERING
TECHNOLOGY — A40140

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>MAT 121</td>
<td>Algebra and Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MAT 122</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>COM 231</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIV 110</td>
<td>Static/Strength of Materials</td>
<td>4</td>
</tr>
<tr>
<td>CIV 111</td>
<td>Soils and Foundations</td>
<td>3</td>
</tr>
<tr>
<td>CIV 211</td>
<td>Hydraulics and Hydrology</td>
<td>3</td>
</tr>
<tr>
<td>CIV 230</td>
<td>Construction Estimating</td>
<td>3</td>
</tr>
<tr>
<td>CIV 240</td>
<td>Project Management</td>
<td>3</td>
</tr>
<tr>
<td>COE 112</td>
<td>Co-op Work Experience I</td>
<td>2</td>
</tr>
<tr>
<td>DFT 110</td>
<td>Basic Drafting</td>
<td>2</td>
</tr>
<tr>
<td>DFT 119</td>
<td>Basic CAD</td>
<td>2</td>
</tr>
<tr>
<td>EGR 115</td>
<td>Introduction to Technology</td>
<td>3</td>
</tr>
<tr>
<td>MEC 180</td>
<td>Engineering Materials</td>
<td>3</td>
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<tr>
<td>SRV 110</td>
<td>Surveying I</td>
<td>4</td>
</tr>
<tr>
<td>SRV 111</td>
<td>Surveying II</td>
<td>4</td>
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</tbody>
</table>

Graduation Requirements: 71 Credit Hours

CAD Electives

Select 2 hours from the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIV 125</td>
<td>Civil/Surveying CAD</td>
<td>3</td>
</tr>
<tr>
<td>DFT 120</td>
<td>Advanced CAD</td>
<td>2</td>
</tr>
</tbody>
</table>

Communication Elective

(Select 3.0 hours from the following courses)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 112</td>
<td>Argument-Based Research</td>
<td>3</td>
</tr>
<tr>
<td>ENG 113</td>
<td>Literature-Based Research</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Prof. Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>COM 120</td>
<td>Intro Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>COM 231</td>
<td>Public Speaking</td>
<td>3</td>
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</tbody>
</table>

Math Elective

(choose 3 credit hours from the following):

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 122</td>
<td>Algebra/Trigonometry II</td>
<td>3</td>
</tr>
<tr>
<td>MAT 172</td>
<td>Precalculus Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MAT 172A</td>
<td>Precalculus Trigonometry Lab</td>
<td>1</td>
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</tbody>
</table>

Physics Elective

(choose 4 credit hours from the following):

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY 131</td>
<td>Physics-Mechanics</td>
<td>4</td>
</tr>
<tr>
<td>PHY 151</td>
<td>College Physics I</td>
<td>4</td>
</tr>
</tbody>
</table>

Humanities/Fine Arts Elective

(Select 3.0 hours from the following courses)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUM 110</td>
<td>Technology and Society</td>
<td>3</td>
</tr>
<tr>
<td>HUM 115</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>HUM 160</td>
<td>Introduction to Film</td>
<td>3</td>
</tr>
<tr>
<td>ART 111</td>
<td>Art Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>REL 110</td>
<td>World Religion</td>
<td>3</td>
</tr>
<tr>
<td>REL 111</td>
<td>Eastern Religion</td>
<td>3</td>
</tr>
<tr>
<td>REL 112</td>
<td>Western Religion</td>
<td>3</td>
</tr>
<tr>
<td>DRA 111</td>
<td>Theater Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>MUS 110</td>
<td>Music Appreciation</td>
<td>3</td>
</tr>
</tbody>
</table>

Social/Behavioral Science Elective

(Select 3.0 hours from the following courses)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANT 210</td>
<td>General Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>ECO 151</td>
<td>Survey of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECO 251</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>GEO 111</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>HIS 111</td>
<td>World Civilization I</td>
<td>3</td>
</tr>
<tr>
<td>HIS 121</td>
<td>Western Civilization I</td>
<td>3</td>
</tr>
<tr>
<td>HIS 131</td>
<td>American History I</td>
<td>3</td>
</tr>
<tr>
<td>POL 110</td>
<td>Introduction to Political Science</td>
<td>3</td>
</tr>
<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 150</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 210</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 213</td>
<td>Sociology of the Family</td>
<td>3</td>
</tr>
<tr>
<td>SOC 220</td>
<td>Social Problems</td>
<td>3</td>
</tr>
</tbody>
</table>

GIS/Math Elective

(choose 3 credit hours from the following):

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 223</td>
<td>Applied Calculus</td>
<td>3</td>
</tr>
<tr>
<td>SOC 271</td>
<td>Calculus I</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Electives

(choose 8 credit hours from the following):

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIS 112</td>
<td>Introduction to GIS</td>
<td>3</td>
</tr>
<tr>
<td>SRV 240</td>
<td>Topo/Site Surveying</td>
<td>3</td>
</tr>
<tr>
<td>SRV 210</td>
<td>Surveying III</td>
<td>3</td>
</tr>
<tr>
<td>SRV 230</td>
<td>Subdivision Planning</td>
<td>3</td>
</tr>
<tr>
<td>CIV 211</td>
<td>Steel &amp; Timber Design</td>
<td>3</td>
</tr>
<tr>
<td>COE 111</td>
<td>Co-op Work Experience I</td>
<td>1</td>
</tr>
<tr>
<td>COE 112</td>
<td>Co-op Work Experience II</td>
<td>2</td>
</tr>
<tr>
<td>COE 131</td>
<td>Co-op Work Experience III</td>
<td>1</td>
</tr>
<tr>
<td>COE 113</td>
<td>Co-op Work Experience I</td>
<td>3</td>
</tr>
<tr>
<td>COE 122</td>
<td>Co-op Work Experience II</td>
<td>2</td>
</tr>
<tr>
<td>COE 121</td>
<td>Co-op Work Experience I</td>
<td>1</td>
</tr>
</tbody>
</table>

CIVIL ENGINEERING TECHNOLOGY: CIVIL DESIGN — C40140A — Day

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIV 125</td>
<td>Civil/Surveying CAD</td>
<td>3</td>
</tr>
<tr>
<td>DFT 120</td>
<td>Advanced CAD</td>
<td>2</td>
</tr>
<tr>
<td>COM 120</td>
<td>Intro Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>SRV 110</td>
<td>Surveying I</td>
<td>4</td>
</tr>
</tbody>
</table>

Completion Requirements: 13-14 Credit Hours

Wake Technical Community College | www.waketech.edu
Computer Engineering Technology

The Computer Engineering Technology curriculum provides the skills required to install, service, and maintain computers, peripherals, networks, and microprocessor and computer controlled equipment. It includes training in both hardware and software, emphasizing operating systems concepts to provide a unified view of computer systems.

Course work includes mathematics, physics, electronics, digital circuits, and programming, with emphasis on the operation, use, and interfacing of memory and devices to the CPU. Additional topics may include communications, networks, operating systems, programming languages, Internet configuration and design, and industrial applications.

Graduates should qualify for employment opportunities in electronics technology, computer service, computer networks, server maintenance, programming, and other areas requiring a knowledge of electronic and computer systems. Graduates may also qualify for certification in electronics, computers, or networks.

COMPUTER ENGINEERING TECHNOLOGY — A40160

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Professional Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>MAT 121</td>
<td>Algebra/Trigonometry I</td>
<td>3</td>
</tr>
<tr>
<td>MAT 122</td>
<td>Algebra/Trigonometry II</td>
<td>3</td>
</tr>
<tr>
<td>MAT 123</td>
<td>Social/Behavioral Science Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 110</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>CSC 133</td>
<td>C Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC 233</td>
<td>Advanced C Programming</td>
<td>3</td>
</tr>
<tr>
<td>EGR 285</td>
<td>Design Project</td>
<td>2</td>
</tr>
<tr>
<td>ELC 131</td>
<td>DC/AC Circuit Analysis</td>
<td>5</td>
</tr>
<tr>
<td>ELN 131</td>
<td>Electronic Devices</td>
<td>4</td>
</tr>
<tr>
<td>ELN 133</td>
<td>Digital Electronics</td>
<td>4</td>
</tr>
<tr>
<td>ELN 232</td>
<td>Introduction to Microprocessors</td>
<td>4</td>
</tr>
<tr>
<td>ELN 233</td>
<td>Microprocessor Systems</td>
<td>4</td>
</tr>
<tr>
<td>NOS 110</td>
<td>Operating System Concepts</td>
<td>3</td>
</tr>
<tr>
<td>NOS 120</td>
<td>Linux/UNIX Single User</td>
<td>3</td>
</tr>
<tr>
<td>NOS 220</td>
<td>Linux/UNIX Administration</td>
<td></td>
</tr>
<tr>
<td>PHY 131</td>
<td>College Physics</td>
<td>4</td>
</tr>
<tr>
<td>COE 112</td>
<td>Co-op Work Experience I</td>
<td>2</td>
</tr>
<tr>
<td>CTS 120</td>
<td>Hardware/Software Support</td>
<td>3</td>
</tr>
<tr>
<td>CTS 220</td>
<td>Advanced Hardware/Software Support</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Electives

Select 3 hours from the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CET 193</td>
<td>Selected Topics</td>
<td>3</td>
</tr>
<tr>
<td>CSC 134</td>
<td>C++ Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC 139</td>
<td>Visual BASIC Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC 151</td>
<td>JAVA Programming</td>
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<tr>
<td>CSC 185</td>
<td>Perl Programming</td>
<td>4</td>
</tr>
<tr>
<td>CSC 245</td>
<td>Advanced C/C++ Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC 249</td>
<td>Data Struct &amp; Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>ELN 132</td>
<td>Linear IC Applications</td>
<td>4</td>
</tr>
<tr>
<td>ELN 136</td>
<td>Telecom Digital Systems</td>
<td>4</td>
</tr>
<tr>
<td>ELN 154</td>
<td>Intro to Data Comm</td>
<td>3</td>
</tr>
<tr>
<td>ELN 193</td>
<td>Selected Topics</td>
<td>3</td>
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</table>

Graduation Requirements ........................................... 74 Credit Hours

COMPUTER INFORMATION TECHNOLOGY — A25260

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Professional Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>HUM 115</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>MAT 145</td>
<td>Analytical Mathematics</td>
<td></td>
</tr>
<tr>
<td>MAT 145A</td>
<td>Analytical Mathematics Lab</td>
<td>1</td>
</tr>
<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 110</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>CIS 115</td>
<td>Introduction to Programming and Logic</td>
<td>3</td>
</tr>
<tr>
<td>CTS 115</td>
<td>Information Systems Business Concept</td>
<td>3</td>
</tr>
<tr>
<td>CTS 120</td>
<td>Hardware/Software Support</td>
<td>3</td>
</tr>
<tr>
<td>CTS 135</td>
<td>Integrated Software Introduction</td>
<td>4</td>
</tr>
<tr>
<td>CTS 155</td>
<td>Tech Support Functions</td>
<td>3</td>
</tr>
</tbody>
</table>

Upon completion, students should be able to participate in open source code development, whether contributing bug reports to existing SourceForge projects or sponsoring their own projects.

CIS 115  Intro to Prog & Logic.............................................. 3
CSC 133  C Programming.................................................. 3
CSC 134  C++ Programming............................................... 3
CSC 233  Advanced C Programming...................................... 3
Completion Requirements................................................ 12 Credit Hours

Computer Information Technology

The Computer Information Technology curriculum is designed to prepare graduates for employment with organizations that use computers to process, manage, and communicate information. This is a flexible program, designed to meet community information systems needs.

Course work includes computer systems terminology and operations, logic, operating systems, database, data communications/networking, and related business topics. Studies will provide experience for students to implement, support, and customize industry-standard information systems.

Graduates should qualify for a wide variety of computer-related, entry-level positions that provide opportunities for advancement with increasing experience and ongoing training. Duties may include systems maintenance and troubleshooting, support and training, and business applications design and implementation.

COMPUTER INFORMATION TECHNOLOGY — A25260

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Professional Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>HUM 115</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>MAT 145</td>
<td>Analytical Mathematics</td>
<td></td>
</tr>
<tr>
<td>MAT 145A</td>
<td>Analytical Mathematics Lab</td>
<td>1</td>
</tr>
<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
<td>3</td>
</tr>
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</table>

Major Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 110</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>CIS 115</td>
<td>Introduction to Programming and Logic</td>
<td>3</td>
</tr>
<tr>
<td>CTS 115</td>
<td>Information Systems Business Concept</td>
<td>3</td>
</tr>
<tr>
<td>CTS 120</td>
<td>Hardware/Software Support</td>
<td>3</td>
</tr>
<tr>
<td>CTS 135</td>
<td>Integrated Software Introduction</td>
<td>4</td>
</tr>
<tr>
<td>CTS 155</td>
<td>Tech Support Functions</td>
<td>3</td>
</tr>
</tbody>
</table>

2008-2009 | Wake Technical Community College
### Graduation Requirements

- **71 Credit Hours**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOS 220</td>
<td>Linux/UNIX Administration I</td>
<td>3</td>
</tr>
<tr>
<td>DBA 110</td>
<td>Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>NET 110</td>
<td>Data Communications/Networking</td>
<td>3</td>
</tr>
<tr>
<td>NOS 110</td>
<td>Operating Systems Concepts</td>
<td>3</td>
</tr>
<tr>
<td>NOS 130</td>
<td>Windows Single User</td>
<td>3</td>
</tr>
<tr>
<td>NOS 230</td>
<td>Windows Administration I</td>
<td>3</td>
</tr>
<tr>
<td>SEC 110</td>
<td>Security Concepts</td>
<td>3</td>
</tr>
</tbody>
</table>

### Major Electives List 1

Select 3 hours from the following courses

- COE 113: Co-op Work Experience I
- CTS 125: Presentation Graphics
- CTS 130: Spreadsheet
- CTS 198: Selected Topics in Computer Crimes Investigation
- CTS 210: Computer Ethics
- CTS 235: Integrated Software Advanced
- CTS 240: Project Management
- CTS 271: Desktop Support: OS
- NOS 120: Linux/UNIX Single User
- WEB 110: Internet/Web Fundamentals

### Completion Requirements

- **12 Credit Hours**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOS 110</td>
<td>Operating Systems Concepts</td>
<td>3</td>
</tr>
<tr>
<td>NET 110</td>
<td>Networking Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CTS 220</td>
<td>Advanced Hardware/Software Support</td>
<td>3</td>
</tr>
<tr>
<td>CTS 255</td>
<td>Advanced Tech Support Functions</td>
<td>3</td>
</tr>
<tr>
<td>CTS 285</td>
<td>Systems Analysis and Design</td>
<td>3</td>
</tr>
<tr>
<td>CTS 289</td>
<td>System Support Project</td>
<td>3</td>
</tr>
<tr>
<td>DBA 110</td>
<td>Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>NET 110</td>
<td>Data Communications/Networking</td>
<td>3</td>
</tr>
<tr>
<td>NOS 110</td>
<td>Operating Systems Concepts</td>
<td>3</td>
</tr>
<tr>
<td>NOS 130</td>
<td>Windows Single User</td>
<td>3</td>
</tr>
<tr>
<td>NOS 230</td>
<td>Windows Administration I</td>
<td>3</td>
</tr>
<tr>
<td>SEC 110</td>
<td>Security Concepts</td>
<td>3</td>
</tr>
</tbody>
</table>

### Major Electives List 2

Select 3 hours from the following courses

- CSC 139: Visual BASIC Programming
- CTS 118: IS Professional Communication
- CTS 230: Advanced Spreadsheet
- CTS 245: Integrated Apps Expert
- CTS 272: Desktop Support: Apps
- CTS 292: Selected Topics in Tech Support Mgr
- CTS 293: Selected Topics in Computer Info. Technology
- CTS 298: Seminar in Data Recovery Techniques
- DBA 115: Database Applications
- NOS 220: Linux/UNIX Administration I

### Graduation Requirements

- **71 Credit Hours**

### Completion Requirements

- **14 Credit Hours**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTS 125</td>
<td>Presentation Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CTS 135</td>
<td>Integrated Software Introduction</td>
<td>4</td>
</tr>
<tr>
<td>CTS 235</td>
<td>Integrated Software Advanced</td>
<td>4</td>
</tr>
<tr>
<td>CTS 245</td>
<td>Integrated Apps Expert</td>
<td>4</td>
</tr>
</tbody>
</table>

### COMPUTER INFORMATION TECHNOLOGY: MICROSOFT OFFICE SPECIALIST (MCAS) — C25260A — Day and Evening

- **13 Credit Hours**

Upon completion, students should be able to integrate data to produce documents using multiple technologies. Students will also gain necessary skills to pursue the Microsoft Office Specialist (M.O.S.) Proficient Level certification examinations in word processing, spreadsheet, and presentation software.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 110</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>CTS 130</td>
<td>Spreadsheet</td>
<td>3</td>
</tr>
<tr>
<td>CTS 135</td>
<td>Integrated Software Introduction</td>
<td>4</td>
</tr>
<tr>
<td>CTS 230</td>
<td>Advanced Spreadsheet</td>
<td>3</td>
</tr>
</tbody>
</table>

### COMPUTER INFORMATION TECHNOLOGY: SPREADSHEET SPECIALIST — C25260E — Day and Evening

- **14 Credit Hours**

Upon completion, students will gain necessary skills to pursue the Microsoft Office Specialist (M.O.S.) certification examinations in Excel at the Core Level and the Expert Level.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTS 235</td>
<td>Integrated Software Introduction</td>
<td>4</td>
</tr>
<tr>
<td>CTS 245</td>
<td>Integrated Apps Expert</td>
<td>4</td>
</tr>
<tr>
<td>CIS 110</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>CTS 130</td>
<td>Spreadsheet</td>
<td>3</td>
</tr>
<tr>
<td>CTS 135</td>
<td>Integrated Software Introduction</td>
<td>4</td>
</tr>
<tr>
<td>CTS 230</td>
<td>Advanced Spreadsheet</td>
<td>3</td>
</tr>
</tbody>
</table>

### COMPUTER INFORMATION TECHNOLOGY: HARDWARE TROUBLESHOOTING — C25260G — Day and Evening

- **12 Credit Hours**

This certificate is designed for individuals interested in acquiring advanced technical skills and knowledge to maintain and repair personal computers. Students gain skills in buying parts, upgrading, building, and configuring personal computers. Major hands-on topics include documentation, troubleshooting techniques, PC architectures, disk drives and controller cards, memory management, add-on boards, and communications devices.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTS 120</td>
<td>Hardware/Software Support</td>
<td>3</td>
</tr>
<tr>
<td>CTS 220</td>
<td>Advanced Hardware/Software Support</td>
<td>3</td>
</tr>
<tr>
<td>NET 110</td>
<td>Networking Hardware/Software Support</td>
<td>3</td>
</tr>
<tr>
<td>NOS 110</td>
<td>Operating System Concepts</td>
<td>3</td>
</tr>
</tbody>
</table>
COMPUTER INFORMATION TECHNOLOGY:

COMPUTER FORENSICS——C25260J

– Day and Evening

The Computer Forensics certificate is designed to provide students with advanced technical skills and knowledge related to retrieving and securing computer-related information for use in legal investigations.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTS 120 Hardware/Software Support</td>
<td>3</td>
</tr>
<tr>
<td>CTS 198 Selected Topics in Computer Crimes Investigation</td>
<td>3</td>
</tr>
<tr>
<td>CTS 210 Computer Ethics</td>
<td>3</td>
</tr>
<tr>
<td>CTS 220 Advanced Hardware/Software Support</td>
<td>3</td>
</tr>
<tr>
<td>CTS 298 Seminar in Data Recovery Techniques</td>
<td>3</td>
</tr>
</tbody>
</table>

Completion Requirements ........................................18 Credit Hours

COMPUTER INFORMATION TECHNOLOGY:

IT FOUNDATION——C25260M

– Day, Evening, and Online

Students will solve business computer problems through programming techniques and procedures, using appropriate languages and software. The primary emphasis of the curriculum is hands-on training in programming and related computer areas that provide the ability to adapt as systems evolve.

Graduates should qualify for employment in business, industry, and government organizations as programmers, programmer trainees, programmer/analysts, software developers, computer operators, systems technicians, database specialists, computer specialists, software specialists, or information systems managers.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 110 Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>CIS 115 Intro to Programming &amp; Logic</td>
<td>3</td>
</tr>
<tr>
<td>CTS 110 Information Systems Business Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CTS 115 Info Sys Business Concept</td>
<td>3</td>
</tr>
<tr>
<td>CTS 220 Advanced Hardware/Software Support</td>
<td>3</td>
</tr>
<tr>
<td>CTS 255 Advanced Tech Support Functions</td>
<td>3</td>
</tr>
<tr>
<td>CTS 285 Systems Analysis &amp; Design</td>
<td>3</td>
</tr>
<tr>
<td>CTS 292 Selected Topics in CIT: Tech Support Manager</td>
<td>2</td>
</tr>
</tbody>
</table>

Completion Requirements ........................................16 Credit Hours

COMPUTER INFORMATION TECHNOLOGY:

COMPUTER & ENGINEERING TECHNOLOGIES

Computer Programming

This curriculum prepares individuals for employment as computer programmers and related positions through study and applications in computer concepts, logic, programming procedures, languages, generators, operating systems, networking, data management, and business operations.

Students will solve business computer problems through programming techniques and procedures, using appropriate languages and software. The primary emphasis of the curriculum is hands-on training in programming and related computer areas that provide the ability to adapt as systems evolve.

Graduates should qualify for employment in business, industry, and government organizations as programmers, programmer trainees, programmer/analysts, software developers, computer operators, systems technicians, database specialists, computer specialists, software specialists, or information systems managers.

COMPUTER PROGRAMMING — A25130

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111 Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>__ __ Communication Elective</td>
<td>3</td>
</tr>
<tr>
<td>__ __ Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>__ __ Math Elective</td>
<td>3</td>
</tr>
<tr>
<td>__ __ Social/Behavioral Science Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 110 Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>CIS 115 Intro to Programming &amp; Logic</td>
<td>3</td>
</tr>
<tr>
<td>CSC 134 C++ Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC 139 Visual BASIC Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC 151 JAVA Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC 234 Advanced C++</td>
<td>3</td>
</tr>
<tr>
<td>CSC 239 Advanced Virtual BASIC</td>
<td>3</td>
</tr>
<tr>
<td>CSC 251 Advanced JAVA Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC 285 Programming Capstone Project</td>
<td>3</td>
</tr>
<tr>
<td>CTS 110 Information Systems Business Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CTS 285 Systems Analysis &amp; Design</td>
<td>3</td>
</tr>
<tr>
<td>DBA 110 Database Concepts</td>
<td>3</td>
</tr>
<tr>
<td>NET 110 Data Communications/Networking</td>
<td>3</td>
</tr>
<tr>
<td>NOS 110 Operating System Concepts</td>
<td>3</td>
</tr>
<tr>
<td>NOS 120 Linux/UNIX Single User</td>
<td>3</td>
</tr>
<tr>
<td>SEC 110 Security Concepts</td>
<td>3</td>
</tr>
</tbody>
</table>

2008-2009 | Wake Technical Community College
**COMPUTER & ENGINEERING TECHNOLOGIES**

### Major Electives List 1
Select 3 hours from the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COE 113</td>
<td>Co-op Work Experience I</td>
<td>3</td>
</tr>
<tr>
<td>CSC 120</td>
<td>Computing Fundamentals I</td>
<td>4</td>
</tr>
<tr>
<td>CSC 141</td>
<td>Visual C++ Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC 152</td>
<td>SAS</td>
<td>4</td>
</tr>
<tr>
<td>CSC 153</td>
<td>C# Programming</td>
<td>3</td>
</tr>
<tr>
<td>DBA 120</td>
<td>Database Programming I</td>
<td>3</td>
</tr>
<tr>
<td>SGD 111</td>
<td>Introduction to SGD</td>
<td>3</td>
</tr>
<tr>
<td>SGD 112</td>
<td>SGD Design</td>
<td>4</td>
</tr>
<tr>
<td>SGD 113</td>
<td>SGD Programming</td>
<td>3</td>
</tr>
<tr>
<td>WEB 115</td>
<td>Web Markup and Scripting</td>
<td>3</td>
</tr>
<tr>
<td>WEB 182</td>
<td>PHP Programming</td>
<td>3</td>
</tr>
<tr>
<td>WEB 183</td>
<td>Perl Programming</td>
<td>3</td>
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</tbody>
</table>

Select 3.0 hours from the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUM 160</td>
<td>Introduction to Film</td>
<td>3</td>
</tr>
<tr>
<td>HUM 115</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>HUM 110</td>
<td>Technology and Society</td>
<td>3</td>
</tr>
<tr>
<td>HUM 115</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>HUM 160</td>
<td>Introduction to Film</td>
<td>3</td>
</tr>
<tr>
<td>HUM 230</td>
<td>Leadership Development</td>
<td>3</td>
</tr>
<tr>
<td>MUS 111</td>
<td>Fundamentals of Music</td>
<td>3</td>
</tr>
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</table>

### Major Electives List 2
Select 3 hours from the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 130</td>
<td>Computing Fundamentals II</td>
<td>4</td>
</tr>
<tr>
<td>CSC 278</td>
<td>JAVA Message Service</td>
<td>3</td>
</tr>
<tr>
<td>CSC 291</td>
<td>Selected Topics in Computer Programming</td>
<td>1</td>
</tr>
<tr>
<td>CSC 292</td>
<td>Selected Topics in Computer Programming</td>
<td>2</td>
</tr>
<tr>
<td>CSC 296</td>
<td>Seminar in Computer Programming</td>
<td>1</td>
</tr>
<tr>
<td>CSC 297</td>
<td>Seminar in Computer Programming</td>
<td>2</td>
</tr>
<tr>
<td>DBA 115</td>
<td>Database Applications</td>
<td>3</td>
</tr>
<tr>
<td>DBA 220</td>
<td>Oracle Database Programming II</td>
<td>3</td>
</tr>
<tr>
<td>DBA 221</td>
<td>SQL Server Database Programming II</td>
<td>3</td>
</tr>
<tr>
<td>DBA 223</td>
<td>MySQL Database Programming II</td>
<td>3</td>
</tr>
<tr>
<td>SGD 114</td>
<td>3D Modeling</td>
<td>3</td>
</tr>
<tr>
<td>SGD 212</td>
<td>SGD Design II</td>
<td></td>
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<tr>
<td>SGD 213</td>
<td>SGD Design III</td>
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</table>

### Major Electives List 3
Select 3 hours from the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 249</td>
<td>Data Structures and Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CSC 278</td>
<td>JAVA Message Service</td>
<td>3</td>
</tr>
<tr>
<td>CSC 291</td>
<td>Selected Topics in Computer Programming</td>
<td>1</td>
</tr>
<tr>
<td>CSC 296</td>
<td>Seminar in Computer Programming</td>
<td>1</td>
</tr>
<tr>
<td>CSC 297</td>
<td>Seminar in Computer Programming</td>
<td>2</td>
</tr>
<tr>
<td>DBA 260</td>
<td>Oracle DBMS Administration</td>
<td>3</td>
</tr>
<tr>
<td>DBA 261</td>
<td>SQL Server DBMS Administration</td>
<td>3</td>
</tr>
<tr>
<td>DBA 263</td>
<td>MySQL DBMS Administration</td>
<td>3</td>
</tr>
<tr>
<td>WEB 180</td>
<td>Active Server Pages</td>
<td>3</td>
</tr>
<tr>
<td>WEB 186</td>
<td>XML Technology</td>
<td>3</td>
</tr>
</tbody>
</table>

### Graduation Requirements
- 73 Credit Hours

### Humanities/Fine Arts Elective
(Select 3.0 hours from the following courses)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 121</td>
<td>Design I</td>
<td>3</td>
</tr>
<tr>
<td>DRA 111</td>
<td>Theatre Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>DRA 126</td>
<td>Storytelling</td>
<td>3</td>
</tr>
<tr>
<td>HUM 110</td>
<td>Technology and Society</td>
<td>3</td>
</tr>
<tr>
<td>HUM 115</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>HUM 160</td>
<td>Introduction to Film</td>
<td>3</td>
</tr>
<tr>
<td>HUM 230</td>
<td>Leadership Development</td>
<td>3</td>
</tr>
<tr>
<td>MUS 111</td>
<td>Fundamentals of Music</td>
<td>3</td>
</tr>
</tbody>
</table>

### Mathematics Elective
(Select 3.0 hours from the following courses)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 145</td>
<td>Analytical Math</td>
<td>3</td>
</tr>
<tr>
<td>MAT 145A</td>
<td>Analytical Math Lab</td>
<td>1</td>
</tr>
<tr>
<td>MAT 161</td>
<td>College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MAT 161A</td>
<td>College Algebra Lab</td>
<td>1</td>
</tr>
<tr>
<td>MAT 171</td>
<td>Pre-Calculus Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MAT 171A</td>
<td>Pre-Calculus Algebra Lab</td>
<td>1</td>
</tr>
<tr>
<td>MAT 175</td>
<td>Precalculus</td>
<td>4</td>
</tr>
<tr>
<td>MAT 175A</td>
<td>Precalculus Lab</td>
<td>1</td>
</tr>
<tr>
<td>MAT 121</td>
<td>Algebra/Trigonometry</td>
<td>3</td>
</tr>
</tbody>
</table>

**Communication Elective**
(Select 3.0 hours from the following courses)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 112</td>
<td>Argument-Based Research</td>
<td>3</td>
</tr>
<tr>
<td>ENG 113</td>
<td>Literature-Based Research</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Prof. Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>COM 120</td>
<td>Intro Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>COM 231</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
</tbody>
</table>

**Social/Behavioral Science Elective**
(Select 3.0 hours from the following courses)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECO 151</td>
<td>Survey of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECO 251</td>
<td>Prin. Of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 150</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 210</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 213</td>
<td>Sociology of the Family</td>
<td>3</td>
</tr>
<tr>
<td>SOC 220</td>
<td>Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>HIS 111</td>
<td>World Civilizations</td>
<td>3</td>
</tr>
<tr>
<td>HIS 121</td>
<td>Western Civilizations I</td>
<td>3</td>
</tr>
<tr>
<td>HIS 131</td>
<td>American History I</td>
<td>3</td>
</tr>
<tr>
<td>POL 110</td>
<td>Introduction Political Science</td>
<td>3</td>
</tr>
</tbody>
</table>

**COMPUTER PROGRAMMING:**

**JAVA PROGRAMMING — C25130A**
- Day and Evening

This certificate is designed for the student who wishes to acquire programming skills for Internet and Intranet application development. Students will learn to program Internet user interfaces, HTML, C++, JAVA, and other computer languages currently used for Internet and Intranet application and applet development.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 115</td>
<td>Introduction to Programming and Logic</td>
<td>3</td>
</tr>
<tr>
<td>CSC 151</td>
<td>JAVA Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC 251</td>
<td>Advanced JAVA Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC 258</td>
<td>JAVA Enterprise Programs</td>
<td>3</td>
</tr>
<tr>
<td>CSC 278</td>
<td>JAVA Message Service</td>
<td>3</td>
</tr>
</tbody>
</table>

**Completion Requirements**
- 15 Credit Hours

**COMPUTER PROGRAMMING: VISUAL BASIC PROGRAMMING — C25130B**
- Day and Evening

Designed for individuals interested in acquiring the advanced programming skills necessary to design and implement Visual BASIC programs. The student will learn how to design Visual BASIC programs using event-driven programming techniques, implement current interface design standards, create reusable code, manupulate records in both a file-based system and a database system, and program customization using API calls. Emphasis is placed on proper program design techniques.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 115</td>
<td>Introduction to Programming and Logic</td>
<td>3</td>
</tr>
<tr>
<td>CSC 139</td>
<td>Visual BASIC Programming</td>
<td>3</td>
</tr>
<tr>
<td>CSC 239</td>
<td>Advanced VISUAL BASIC</td>
<td>3</td>
</tr>
<tr>
<td>CSC 292</td>
<td>Selected Topics in Computer Programming</td>
<td>3</td>
</tr>
<tr>
<td>DBA 110</td>
<td>Database Concepts</td>
<td>5</td>
</tr>
<tr>
<td>WEB 180</td>
<td>Active Server Pages</td>
<td>3</td>
</tr>
</tbody>
</table>

**Completion Requirements**
- 17 Credit Hours

**COMPUTER PROGRAMMING:**

**C++ PROGRAMMING — C25130C**
- Day and Evening

The C++ Programming certificate offers courses for students interested in upgrading their programming skills by acquiring proficiency in an object-oriented programming language. This program is also appropriate for individuals who are new to programming. Instruction in C++ programming includes
Database Management

The Database Management curriculum prepares graduates for employment with organizations that use database management system software to process, manage, and communicate information. Additionally, the curriculum provides the student with a foundation to begin professional certification with Microsoft or ORACLE database programs.

Course work includes terminology and design, database administration, backup and recovery, performance and tuning, database programming and tools, and related topics. Studies will provide an opportunity for students to implement, support, and manage industry standard database systems.

Graduates should qualify for a wide variety of database and computer related entry-level positions that provide opportunities for advancement with increasing experience and ongoing training.

Completion Requirements: 36 Credit Hours

DATABASE MANAGEMENT — A25150

General Education Courses

ENG 111 Expository Writing .................. 3
ENG 114 Professional Research and Reporting.. 3
HUM 115 Critical Thinking .................. 3
MAT 145 Analytical Math ..................... 3
MAT 145A Analytical Math Lab ................ 1
PSY 150 General Psychology .................. 3

Major Courses

CIS 110 Introduction to Computers ............... 3
CIS 115 Introduction to Programming and Logic ... 3
CSC 139 Visual BASIC Programming ............... 3
CSC 239 Advanced Visual BASIC Programming .... 3
CTS 115 Information Systems Business Concept ... 3
CTS 285 Systems Analysis and Design .......... 3
DBA 110 Database Concepts .................... 3
DBA 115 Database Applications ................ 3
DBA 120 Database Programming I ................ 3
DBA 210 Database Administration ................ 3
DBA 230 Database in Corporate Environments .... 3
DBA 240 Database Analysis/Design ................ 3
DBA 289 Database Project ...................... 3
NET 110 Networking Concepts .................. 3
NOS 110 Operating System Concepts ............. 3
SEC 110 Security Concepts .................... 3

Major Electives List 1
Select 3 hours from the following courses

COE 113 Co-op Work Experience I ............... 3
CSC 153C# Programming ....................... 3
CSC 153 C# Programming ...................... 3
DBA 220 Oracle Database Programming II .......... 3
DBA 221 SQL Server Database Programming II .... 3
DBA 222 DB2 Database Programming II............. 3
DBA 223 MySQL Database Programming II .......... 3
DBA 224 SAS Database Programming II ............ 3
WEB 115 Web Markup and Scripting ............... 3
WEB 182 PHP Programming ..................... 3
WEB 186 XML Technology ...................... 3

Major Electives List 2
Select 3 hours from the following courses

DBA 120 Oracle DBMS Administration .......... 3
DBA 260 SQL Server DBMS Administration ....... 3
DBA 261 DB2 DBMS Administration ............... 3
DBA 262 MySQL DBMS Administration ......... 3
DBA 264 SAS DBMS Administration .............. 3
NOS 130 Windows Single User .................. 3
WEB 140 Web Development Tools ................ 3
WEB 183 Perl Programming .................... 3

Major Electives List 3
Select 3 hours from the following courses

DBA 192 Selected Topic ....................... 3
DBA 260 Oracle Performance Tuning ............ 3
DBA 271 SQL Server Performance Tuning ......... 3
DBA 272 DB2 Performance Tuning ............... 3
DBA 273 MySQL Performance Tuning .......... 3
DBA 274 SAS Performance Tuning ............... 3
DBA 285 Data Warehousing and Mining ......... 3
DBA 291 Selected Topic ....................... 1
DBA 292 Selected Topic ....................... 2
DBA 293 Selected Topic ....................... 3
WEB 180 Active Server Pages .................. 3
WEB 210 Web Design .......................... 3
WEB 250 Database Driven Websites .............. 3

Graduation Requirements .......................... 73 Credit Hours
DATABASE MANAGEMENT: ORACLE DEVELOPER – C25150A
--Day and Evening
This certificate is designed for the student who wishes to acquire Oracle 9i database developer skills. Students will learn database theory and the logic necessary to build enterprise-class, scalable database applications. In addition, students will learn to construct sophisticated database forms and to develop logic skills in reports and screens. Upon completion, students will be prepared to pursue certification examinations in Oracle Developer Associate and Oracle Developer Professional. Completion of CIS 115 or its equivalent is required before entering this program.

DBA 120 Database Programming I.................................3
DBA 192 Selected Topics in Database Management: Oracle Internet Application........2
DBA 220 Oracle DB Programming II.............................3
DBA 240 Database Analysis/Design...............................3
DBA 291 Selected Topics in Database Management: Oracle Project .....................1

Completion Requirements ........................................12 Credit Hours

DATABASE MANAGEMENT: ORACLE DBA PROGRAMMING — C25150B
--Day and Evening
This certificate is designed for the student who wishes to acquire Oracle database theory, SQL programming, database administration fundamentals, and performance tuning techniques. Completion of CIS 115 or its equivalent is required before entering the program.

DBA 120 Database Programming I.................................3
DBA 193 Selected Topics in Database Management: Oracle Optimization..................3
DBA 230 Database in Corporate Environments...................3
DBA 240 Database Analysis/Design...............................3
DBA 260 Oracle DBMS Administration..........................3

Completion Requirements ........................................15 Credit Hours

DATABASE MANAGEMENT: MySQL Developer - C25150C
CIS 115 Introduction to Programming and Logic...................3
DBA 120 Database Programming I.................................3
DBA 223 MySQL Database Programming II........................3
DBA 263 MySQL DBMS Administration..........................3
DBA 293 Selected Topics in DBA: MySQL Project................3
WEB 182 PHP Programming........................................3

Completion Requirements ..........................................18 Credit Hours

Electronics Engineering Technology
The Electronics Engineering Technology curriculum prepares individuals to become technicians who design, build, install, test, troubleshoot, and repair, and modify development and production electronic components, equipment, and systems such as industrial/ computer controls, manufacturing systems, communication systems, and power electronic systems.

A broad-based core of courses, including basic electricity, solid-state fundamentals, digital concepts, and microprocessors, ensures the student will develop the skills necessary to perform entry-level tasks. Emphasis is placed on developing the student’s ability to analyze and troubleshoot electronic systems.

Graduates should qualify for employment as engineering assistants or electronic technicians with job titles such as electronics engineering technician, field service technician, maintenance technician, electronic tester, electronic systems integrator, bench technician, and production control technician.

ELECTRONICS ENGINEERING TECHNOLOGY — A40200
General Education Courses
ENG 111 Expository Writing.......................................3
ENG 114 Professional Research and Reporting................3
MAT 121 Algebra and Trigonometry...........................3
HUM 110 Technology and Society.................................3
SOC 131 Social/Behavioral Science Elective..................3

Major Courses
ATR 213 Programmable Controllers..............................4
CSC 133 C Programming...........................................3
EGR 131 Introduction to Electronics Technology...........2
EGR 285 Design Project............................................2
ELC 131 DC/AC Circuit Analysis.................................5
ELN 147 Semiconductor Applications..........................4
ELN 132 Linear IC Applications................................4
ELN 133 Digital Electronics......................................4
ELN 150 CAD for Electronics....................................2
ELN 154 Introduction to Data Communications................3
ELN 232 Introduction to Microprocessors.....................4
ELN 233 Microprocessor Systems................................4
ELN 234 Communication Systems................................4
ELN 275 Troubleshooting........................................2
MAT 122 Algebra/Trigonometry II...............................3
PHY 131 Physics-Mechanics......................................4

Major Electives
Select 3 hours from the following courses
ATR 211 Robot Programming.....................................3
ATR 214 Advanced PLCs..........................................4
ATR 215 Sensors and Transducers...............................3
EGR 125 Applied Software for Technicians...................2
ELN 193 Selected Topics: Electronics Engineering...........3
ELN 231 Industrial Controls......................................3
ELN 235 Data Communication System........................4
ELN 236 Fiber Optics and Lasers...............................4
MAT 223 Applied Calculus.......................................3

Elective Courses
Select 2 hours from the following courses
CIS 110 Introduction to Computers............................3
CIS 111 Basic PC Literacy........................................3
NOS 110 Operating System Concepts..........................3

Co-op Work Experiences
Select 2 hours from the following courses
COE 111 Co-op Work Experience I..............................1
COE 112 Co-op Work Experience II............................2
COE 121 Co-op Work Experience II............................1
COE 122 Co-op Work Experience II............................2

Graduation Requirements ..........................................76 Credit Hours

ELECTRONICS ENGINEERING TECHNOLOGY: BASIC ELECTRONICS — C40200A
The Basic Electronics certificate provides the student with a program of study necessary for developing basic electronic skills. The student will gain an understanding of AC/DC basic circuits, digital circuits, and basic electronic devices. Courses are an adjunct of the
**Electronics Engineering Technology** program and may be transferred directly toward completion of the A.A.S. degree in Electronics Engineering Technology.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 111 Basic PC Literacy*</td>
<td>2</td>
</tr>
<tr>
<td>ELC 131 DC/AC Circuit Analysis</td>
<td>5</td>
</tr>
<tr>
<td>ELN 131 Electronics Devices</td>
<td>4</td>
</tr>
<tr>
<td>ELN 133 Digital Electronics</td>
<td>4</td>
</tr>
<tr>
<td>MAT 121 Algebra and Trigonometry</td>
<td>3</td>
</tr>
</tbody>
</table>

**Completion Requirements** ..................................................... **18 Credit Hours**

*CIS 110: Introduction to Computers or NOS 110: Operating System Concepts can substitute for CIS 111.

**ELECTRONICS ENGINEERING TECHNOLOGY: PLC Programming Certificate – C40200B**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATR 213 Programmable Controllers</td>
<td>4</td>
</tr>
<tr>
<td>ATR 214 Advanced PLCs</td>
<td>4</td>
</tr>
<tr>
<td>ATR 215 Sensors and Transducers</td>
<td>3</td>
</tr>
<tr>
<td>ELN 231 Industrial Controls</td>
<td>3</td>
</tr>
</tbody>
</table>

**Completion Requirements** ............................................... **14 Credit Hours**

**ELECTRONICS ENGINEERING TECHNOLOGY: Robotics- C40200C**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATR 211 Robot Programming</td>
<td>3</td>
</tr>
<tr>
<td>ATR 213 Programmable Controllers</td>
<td>4</td>
</tr>
<tr>
<td>ATR 214 Advanced PLCs</td>
<td>4</td>
</tr>
<tr>
<td>EGR 125 Appl. Software for Tech</td>
<td>2</td>
</tr>
</tbody>
</table>

**Completion Requirements** ............................................... **13 Credit Hours**

**Environmental Science Technology**

The Environmental Science Technology curriculum is designed to prepare individuals for employment in environmental testing/consulting and related industries. Major emphasis is placed on biological and chemical evaluation of man's impact on his environment.

Course work includes general education, computer applications, biology, chemistry, industrial safety, and an extensive array of detailed environmentally specific classes.

Graduates should qualify for numerous positions within the industry. Employment opportunities include, but are not limited to, the following: Chemical Analysis, Biological Analysis, Water/Wastewater Treatment, EPA Compliance Inspection, Hazardous Material Handling, Waste Abatement/Removal, and Contaminated Site Assessment/Remediation.

**ENVIRONMENTAL SCIENCE TECHNOLOGY — A20140**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111 Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114 Professional Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>MAT 121 Algebra and Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>— — Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>— — Social/Behavior Science Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

**Major Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 110 Principles of Biology</td>
<td>4</td>
</tr>
</tbody>
</table>

**Environmental Science Technology Course Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM 131 Introduction to Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHM 131A Introduction to Chemistry Lab</td>
<td>1</td>
</tr>
<tr>
<td>CHM 132 Organic and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>ENV 110 Environmental Science</td>
<td>3</td>
</tr>
<tr>
<td>ENV 110A Environmental Science Lab</td>
<td>3</td>
</tr>
<tr>
<td>ENV 120 Earth Science</td>
<td>4</td>
</tr>
<tr>
<td>ENV 210 Management of Waste</td>
<td>4</td>
</tr>
<tr>
<td>ENV 212 Instrumentation</td>
<td>4</td>
</tr>
<tr>
<td>EGR 115 Introduction to Technology</td>
<td>3</td>
</tr>
<tr>
<td>ENV 218 Environmental Health</td>
<td>3</td>
</tr>
<tr>
<td>ENV 220 Applied Ecology</td>
<td>4</td>
</tr>
<tr>
<td>GIS 111 Introduction to GIS</td>
<td>3</td>
</tr>
<tr>
<td>GIS 112 Introduction to GPS</td>
<td>3</td>
</tr>
<tr>
<td>ISC 112 Industrial Safety</td>
<td>2</td>
</tr>
</tbody>
</table>

**Major Electives**

(choose 6 credit hours from the following):

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENV 112 Env. Education I</td>
<td>3</td>
</tr>
<tr>
<td>ENV 114 Env. Education II</td>
<td>3</td>
</tr>
<tr>
<td>ENV 214 Water Quality</td>
<td>4</td>
</tr>
<tr>
<td>ENV 222 Air Quality</td>
<td>4</td>
</tr>
<tr>
<td>ENV 226 Environmental Law</td>
<td>3</td>
</tr>
<tr>
<td>ENV 228 Environmental Issues</td>
<td>1</td>
</tr>
<tr>
<td>ENV 232 Site Assessment and Remediation</td>
<td>3</td>
</tr>
</tbody>
</table>

**Graduation Requirements** ............................................... **73 Credit Hours**

**Humanities/Fine Arts Elective**

(Select 3.0 hours from the following courses)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUM 110 Technology and Society</td>
<td>3</td>
</tr>
<tr>
<td>HUM 115 Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>HUM 160 Introduction to Film</td>
<td>3</td>
</tr>
<tr>
<td>HUM 230 Leadership Development</td>
<td>3</td>
</tr>
</tbody>
</table>

**Social/Behavioral Science Elective**

(Select 3.0 hours from the following courses)

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY 118 Interpersonal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 210 Introduction to Sociology</td>
<td>3</td>
</tr>
</tbody>
</table>

*Cooperative education or an equivalent is required during these terms. Students must have approval from the Dean and pre-register with the Co-op Office.

**High Performance Computing**

**HIGH PERFORMANCE COMPUTING: BIOINFORMATICS COMPUTING— C25230B**

- Day and Evening

Bioinformatics is the field of science in which biology and information technology merge into a single discipline. The study of Bioinformatics combines the basic knowledge of Biology with the computer skills necessary to manage the data generated by biological researchers. Topics include the development and application of computer methods for management, analysis, interpretation and predictions of biological databases. Students will use software tools for database creation, data warehousing, data mining and analysis. Bioinformatics as a field of study is becoming increasingly important due to the interest of the pharmaceutical industry in genome sequencing projects. The certificate focus will be on the database related IT skills necessary for a bioinformatics student.

Prerequisites to enter the program include biology course work at the post-secondary level or the permission of the department.
Industrial Engineering Technology

The industrial engineering technology curriculum prepares graduates to perform as technical leaders in manufacturing and service organizations. The curriculum incorporates the study and application of methods and techniques for developing, implementing and improving integrated systems involving people, material, equipment, information, and quality systems. The course work emphasizes analytical and problem solving techniques for process development and improvement.

The curriculum includes systems analysis, quality and productivity improvement techniques, cost analysis, facilities planning, organizational management, effective communications and computer usage as a problem-solving tool.

Graduates of the curriculum will qualify for positions in a wide range of manufacturing, quality and service organizations. Employment opportunities include industrial engineering technology, quality assurance, supervision, team leadership and facilities management. Certification is available through organizations such as ASQC, SME and APICS.

INDUSTRIAL ENGINEERING TECHNOLOGY — A40240

General Education Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>COE 112</td>
<td>Co-op Work Experience I</td>
<td>2</td>
</tr>
<tr>
<td>NOS 221</td>
<td>Communication Elective</td>
<td>3</td>
</tr>
<tr>
<td>NOS 222</td>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>NOS 223</td>
<td>Math Elective</td>
<td>3</td>
</tr>
<tr>
<td>NOS 224</td>
<td>Social/Behavioral Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>HUM 230</td>
<td>Leadership Development</td>
<td>3</td>
</tr>
</tbody>
</table>

Major Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFT 170</td>
<td>Engineering Graphics (Solid Works)</td>
<td>3</td>
</tr>
<tr>
<td>EGR 115</td>
<td>Introduction to Technology</td>
<td>3</td>
</tr>
<tr>
<td>EGR 285</td>
<td>Design Project</td>
<td>2</td>
</tr>
<tr>
<td>ISC 112</td>
<td>Industrial Safety</td>
<td>2</td>
</tr>
<tr>
<td>ISC 128</td>
<td>Industrial Leadership</td>
<td>2</td>
</tr>
<tr>
<td>ISC 132</td>
<td>Manufacturing Quality Control</td>
<td>2</td>
</tr>
<tr>
<td>ISC 136</td>
<td>Productivity Analysis</td>
<td>2</td>
</tr>
<tr>
<td>ISC 243</td>
<td>Production and Operations Management I</td>
<td>3</td>
</tr>
<tr>
<td>ISC 255</td>
<td>Engineering Economy</td>
<td>3</td>
</tr>
<tr>
<td>MEC 180</td>
<td>Engineering Materials</td>
<td>3</td>
</tr>
</tbody>
</table>

Completion Requirements — 15 Credit Hours

HIGH PERFORMANCE COMPUTING: LINUX/RED HAT ADMINISTRATION — C25230C - Day and Evening

This certificate is designed to prepare students for the Red Hat Certified Engineer (RHCE) examination. Topics include network installation, Red Hat Linux file system and kernel concepts, scripts, system recovery, cron system, LILO configuration, implement configure, log and restrict various Red Hat network services, configuration issues associated with using Red Hat Linux as a router, basic firewall policies, and basics of the XWindow system.

Completion of NOS 110 is required to begin this program.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOS 120</td>
<td>Linux/UNIX Single User</td>
<td>3</td>
</tr>
<tr>
<td>NOS 220</td>
<td>Linux/UNIX Administration I</td>
<td>3</td>
</tr>
<tr>
<td>NOS 221</td>
<td>Linux/UNIX Administration II</td>
<td>3</td>
</tr>
<tr>
<td>NOS 222</td>
<td>Linux/UNIX Administration III</td>
<td>3</td>
</tr>
</tbody>
</table>

Completion Requirements — 12 Credit Hours

Graduation Requirements — 68 Credit Hours

Humanities/Fine Arts

(Select 3.0 hours from the following courses)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUM 110</td>
<td>Technology and Society</td>
<td>3</td>
</tr>
<tr>
<td>HUM 115</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>HUM 160</td>
<td>Introduction to Film</td>
<td>3</td>
</tr>
<tr>
<td>HUM 230</td>
<td>Leadership Development</td>
<td>3</td>
</tr>
</tbody>
</table>

Mathematics Elective

(Select 3.0 hours from the following courses)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 151</td>
<td>Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>MAT 151A</td>
<td>Statistics I Lab</td>
<td>1</td>
</tr>
<tr>
<td>MAT 161</td>
<td>College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MAT 161A</td>
<td>College Algebra Lab</td>
<td>1</td>
</tr>
<tr>
<td>MAT 171</td>
<td>Pre-Calculus Algebra</td>
<td>3</td>
</tr>
<tr>
<td>MAT 171A</td>
<td>Pre-Calculus Algebra Lab</td>
<td>1</td>
</tr>
<tr>
<td>MAT 121</td>
<td>Algebra/Trigonometry</td>
<td>3</td>
</tr>
</tbody>
</table>

Communication Elective

(Select 3.0 hours from the following courses)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 112</td>
<td>Argument-Based Research</td>
<td>3</td>
</tr>
<tr>
<td>ENG 113</td>
<td>Literature-Based Research</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Prof. Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>COM 120</td>
<td>Intro Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>COM 231</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
</tbody>
</table>

Social/Behavioral Science Elective

(Select 3.0 hours from the following courses)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECO 151</td>
<td>Survey of Economics</td>
<td>3</td>
</tr>
<tr>
<td>ECO 251</td>
<td>Prin. Of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECO 252</td>
<td>Prin. of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 150</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 210</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 213</td>
<td>Sociology of the Family</td>
<td>3</td>
</tr>
<tr>
<td>SOC 220</td>
<td>Social Problems</td>
<td>3</td>
</tr>
</tbody>
</table>

Math and Science Elective

(Select 6.0 hours from the following courses)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 122</td>
<td>Algebra/Trigonometry II</td>
<td>3</td>
</tr>
</tbody>
</table>
INDUSTRIAL ENGINEERING TECHNOLOGY: INDUSTRIAL MANAGEMENT — C40240A — Evening Only

The Industrial Management certificate curriculum provides the student with a progressive study program that will support the development of basic technical skills and knowledge necessary for success in the industrial/manufacturing environment. There are no prerequisites required for entering this certificate program. The course requirements are self-contained for providing the necessary basic math and manufacturing processes introduction. The core of the program is designed to provide the skills and knowledge needed to understand and perform various job functions in the industrial/manufacturing setting.

These courses are currently a part of the Industrial and Manufacturing Engineering Technology curricula and can be transferred directly into the Associate in Applied Science Degree for either curriculum.

**Completion Requirements** — 13 Credit Hours

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISC 112</td>
<td>Industrial Safety</td>
<td>2</td>
</tr>
<tr>
<td>ISC 128</td>
<td>Industrial Leadership</td>
<td>2</td>
</tr>
<tr>
<td>ISC 243</td>
<td>Production and Operations Management I</td>
<td>3</td>
</tr>
<tr>
<td>ISC 255</td>
<td>Engineering Economy</td>
<td>3</td>
</tr>
<tr>
<td>ISC 132</td>
<td>Manufacturing Quality Control</td>
<td>3</td>
</tr>
</tbody>
</table>

**INDUSTRIAL ENGINEERING TECHNOLOGY: QUALITY ASSURANCE— C40240B**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFT 110</td>
<td>Basic Drafting (AutoCAD)</td>
<td>2</td>
</tr>
<tr>
<td>DFT 121</td>
<td>Introduction to GD and T</td>
<td>2</td>
</tr>
<tr>
<td>ISC 132</td>
<td>Manufacturing Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>ISC 175</td>
<td>QA Fundamentals</td>
<td>1</td>
</tr>
<tr>
<td>ISC 278</td>
<td>cGMP Quality System</td>
<td>2</td>
</tr>
<tr>
<td>EGR 115</td>
<td>Introduction to Technology</td>
<td>3</td>
</tr>
</tbody>
</table>

**INDUSTRIAL ENGINEERING TECHNOLOGY: ADVANCED QUALITY ASSURANCE— C40240C**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISC 132</td>
<td>Manufacturing Quality Control</td>
<td>3</td>
</tr>
<tr>
<td>ISC 237</td>
<td>Quality Management</td>
<td>3</td>
</tr>
<tr>
<td>ISC 277</td>
<td>Quality Technology</td>
<td>4</td>
</tr>
<tr>
<td>ISC 280</td>
<td>Validation Fundamentals</td>
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</tbody>
</table>

**INDUSTRIAL ENGINEERING TECHNOLOGY: Manufacturing Principles Control — C40240D**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISC 112</td>
<td>Industrial Safety</td>
<td>2</td>
</tr>
<tr>
<td>ISC 136</td>
<td>Productivity Analysis</td>
<td>3</td>
</tr>
<tr>
<td>ISC 278</td>
<td>cGMP Quality Systems</td>
<td>2</td>
</tr>
<tr>
<td>PTC 222</td>
<td>Pharmaceutical Process Control</td>
<td>3</td>
</tr>
</tbody>
</table>

Manufacturing Processing Electives (Select 3 hours from the following courses)

- MEC 161 Manufacturing Processes I ........................................ 3
- BPM 110 Biomanufacturing Practices .................................... 5

**Completion Requirements** — 13 Credit Hours

Information Systems Security

Information Systems Security covers a broad expanse of technology concepts. This curriculum provides individuals with the skills required to implement effective and comprehensive information security controls.

Course work includes networking technologies, operating systems administration, information policy, intrusion detection, security administration, and industry best practices to protect data communications.

Graduates should be prepared for employment as security administrators. Additionally, they will acquire the skills that allow them to pursue security certifications.

**INFORMATION SYSTEMS SECURITY — A25270**

**General Education Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>___</td>
<td>Communication Elective</td>
<td>3</td>
</tr>
<tr>
<td>___</td>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>___</td>
<td>Math Elective</td>
<td>3</td>
</tr>
<tr>
<td>___</td>
<td>Social/Behavioral Science Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

**Major Courses**

CIS 110 Introduction to Computers .................................... 3
CIS 115 Introduction to Programming and Logic .................... 3
CTS 115 Information Systems Business Concepts .................... 3
DBA 110 Database Concepts ............................................ 3
NET 125 Networking Basics ............................................. 3
NET 126 Routing Basics ................................................. 3
ROS 110 Operating System Concepts .................................. 3
ROS 120 Linux/UNIX Single User ..................................... 3
ROS 130 Windows Single User .......................................... 3
ROS 220 Linux/UNIX Administration I ................................ 3
ROS 230 Windows Administration I ................................... 3
SEC 110 Security Concepts ............................................ 3
SEC 150 Secure Communications ....................................... 3
SEC 160 Secure Administration I .................................... 3
SEC 210 Intrusion Detection .......................................... 3
SEC 220 Defense-In-Depth ............................................. 3
SEC 289 Security Capstone Project .................................. 3

**Major Electives List 1**

Select 3 hours from the following courses

COE 113 Co-op Work Experience I .................................... 3
NET 175 Wireless Technology ......................................... 3
NET 225 Routing and Switching I .................................... 3
ROS 220 Linux/UNIX Admin II ......................................... 3
ROS 231 Windows Administration II .................................. 3
SEC 193 Selected Topics ............................................. 3
SEC 198 Seminar ..................................................... 3

**Major Electives List 2**

Select 3 hours from the following courses

COE 123 Co-op Experience II ......................................... 3
NET 226 Routing and Switching II .................................. 3
ROS 221 Linux/UNIX Administration II ................................ 3
ROS 232 Windows Administration III .................................. 3
SEC 240 Wireless Security ............................................ 3
### Completion Requirements

- **18 Credit Hours**

### Human Resources/Technology
- **SEC 293** Selected Topics .................................................. 3
- **SEC 298** Seminar .............................................................. 3

### Graduation Requirements

- **72 Credit Hours**

### Humanities/Fine Arts Elective

(Select 3.0 hours from the following courses)
- **HUM 110** Technology and Society ........................................ 3
- **HUM 115** Critical Thinking .................................................. 3
- **HUM 160** Introduction to Film .............................................. 3
- **HUM 230** Leadership Development ....................................... 3

### Mathematics Elective

(Select 3.0 hours from the following courses)
- **MAT 145** Analytical Math .................................................. 3
- **MAT 145A** Analytical Math Lab .......................................... 1
- **MAT 161** College Algebra .................................................. 3
- **MAT 161A** College Algebra Lab ......................................... 1
- **MAT 171** Pre-Calculus Algebra ............................................ 3
- **MAT 171A** Pre-Calculus Algebra Lab ................................... 1
- **MAT 121** Algebra/Trigonometry ......................................... 3

### Communication Elective

(Select 3.0 hours from the following courses)
- **ENG 113** Literature-Based Research .................................... 3
- **ENG 114** Prof. Research and Reporting .................................. 3
- **COM 120** Intro Interpersonal Communication .......................... 3
- **COM 231** Public Speaking .................................................. 3

### Social/Behavioral Science Elective

(Select 3.0 hours from the following courses)
- **SOC 210** Introduction to Sociology ..................................... 3
- **SOC 213** Sociology of the Family ........................................ 3
- **SOC 220** Social Problems .................................................. 3

### INFORMATION SYSTEMS SECURITY — C25270A – Day and Evening

- **NET 125** Networking Basics .............................................. 3
- **SEC 110** Security Concepts .................................................. 3
- **SEC 150** Secure Communications ...................................... 3
- **SEC 160** Secure Administration I ....................................... 3
- **SEC 210** Intrusion Detection ............................................... 3
- **SEC 220** Defense-in-Depth ................................................. 3

**Completion Requirements** .................................................. 18 Credit Hours

### Landscape Architecture Technology

The Landscape Architecture Technology curriculum prepares individuals as landscape architecture technicians in landscape design, construction, and architecture fields. The well-trained landscape technician will find excellent prospects for employment and advancement, including large-scale site design and supervision and residential landscape design.

Students receive instruction in landscape construction materials and methods, environmental planning, principles of horticulture, building codes, and computer applications. They develop drafting and computer skills through progressive hands-on courses. Students may choose from a library of courses to suit specific interest areas.

Graduates will demonstrate a working knowledge of landscape architectural practices, including site planning, storm water engineering, road and parking layouts, and grading and plant selection according to zoning/code requirements.

### LANDSCAPE ARCHITECTURE TECHNOLOGY — A40260

#### General Education Courses

- **ENG 111** Expository Writing .............................................. 3
- **ENG 114** Professional Research and Reporting ....................... 3
- **MAT 121** Algebra and Trigonometry .................................... 3
- **HUM** Humanities/Fine Arts Elective .................................. 3
- **SOC** Social/Behavioral Science Elective .............................. 3

#### Major Courses

- **ARC 114** Architectural CAD .............................................. 2
- **ARC 114A** Architectural CAD Lab ..................................... 1
- **ARC 240** Site Planning .................................................... 3
- **CIV 125** Civil/ Surveying CAD ........................................... 3
- **COE 113** Co-op Work Experience I ................................... 3
- **ENV 110** Environmental Science ....................................... 3
- **LAR 111** Introduction to Landscape Architecture Technology ........... 3
- **LAR 112** Landscape Materials and Methods .......................... 4
- **LAR 113** Residential Landscape Design .................................. 3
- **LAR 211** Landscape Construction and Design .......................... 3
- **LAR 223** Landscape Design Project ..................................... 4
- **LAR 230** Principles of Horticulture I ................................... 4
- **LAR 231** Principles of Horticulture II ................................... 3
### CAD Electives
(Select 5.0 hours from the following courses)
- DFT 189 Emerging Tech in CAD
- DFT 154 Intro Solid Modeling (Pro/ENGINEER)
- EGR 120 End and Design Graphics

### Manufacturing Processing Electives
(Select 3 hours from the following courses)
- MEC 161 Manufacturing Processes I
- BPM 110 Biomanufacturing Practices

### Graduation Requirements
- 69 Credit Hours

---

### Mechanical Engineering Technology

The Mechanical Engineering Technology curriculum provides a broad and diverse educational experience. Course work includes computer-aided drafting and design, applied mechanics, materials engineering, quality control, manufacturing methods and processes, computer usage, mathematics, physics and oral and written communications. The courses will stress critical thinking, planning and problem solving.

The diversity of Mechanical Engineering Technology degree enables students to pursue exciting careers in following fields:
- Engineering/Architectural
- Mechanical Design
- Manufacturing
- Quality
- Service

If elected, students can pursue a 4 year Engineering Technology degree after graduation.

### MECHANICAL ENGINEERING TECHNOLOGY — A40320

#### General Education Courses
- ENG 111 Expository Writing
- COE 112 Co-op Work Experience I
- CIV 112 Communication Elective
- ARC 114 Architecture CAD
- ARC 113 Architectural 3-D Design
- ARC 214 Contract Administration
- ARC 264 Digital Architecture
- CIV 230 Construction Estimating
- ENV 220 Applied Ecology
- LAR 111 Introduction to Landscape Architecture
- LAR 112 Landscape Materials and Methods
- LAR 113 Residential Landscape Design
- LAR 230 Principles of Horticulture I
- MAT 122 Algebra/Trigonometry II
- MAT 172 Precalculus Trigonometry
- MAT 252 Precalculus Trig Lab
- ECO 151 Survey of Economics
- ECO 251 Prin. Of Microeconomics
- ECO 252 Prin. Of Macroeconomics
- PSY 118 Interpersonal Psychology
- PSY 150 General Psychology
- SOC 210 Introduction to Sociology
- SOC 213 Sociology of the Family
- SOC 220 Social Problems
- PHR 151 Physics – Mechanics
- PHR 131 Physics I

---

### Graduation Requirements
- 66 Credit Hours

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### Humanities/Fine Arts
- 3 hours from the following courses:
  - HUM 110 Technology and Society
  - HUM 115 Critical Thinking
  - HUM 120 Introduction to Film
  - HUM 230 Leadership Development

---

### Mathematics Elective
(Select 3.0 hours from the following courses)
- MAT 161 College Algebra
- MAT 161A College Algebra Lab
- MAT 171 Pre-Calculus Algebra
- MAT 171A Pre-Calculus Algebra Lab
- MAT 121 Algebra/Trigonometry

---

### Communication Elective
(Select 3.0 hours from the following courses)
- ENG 113 Literature-Based Research
- ENG 112 Argument-Based Research
- ENG 114 Prof. Research and Reporting
- COM 120 Intro Interpersonal Communication
- COM 231 Public Speaking

---

### Social/Behavioral Science Elective
(Select 3.0 hours from the following courses)
- ECO 151 Survey of Economics
- ECO 251 Prin. Of Microeconomics
- ECO 252 Prin. Of Macroeconomics
- PSY 118 Interpersonal Psychology
- PSY 150 General Psychology
- SOC 210 Introduction to Sociology
- SOC 213 Sociology of the Family
- SOC 220 Social Problems

---

### Math and Science Elective
(Select 6.0 hours from the following courses)
- MAT 122 Algebra/Trigonometry II
- MAT 172 Precalculus Trigonometry
- MAT 172A Precalculus Trig Lab
- CHM 131 Introduction to Chemistry
- CHM 131A Intro to Chemistry Lab
- CHM 151 General Chemistry I
- PHY 131 Physics – Mechanics
- PHY 151 College Physics I
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>DFT 110</td>
<td>Basic Drafting (AutoCAD)</td>
<td>2</td>
</tr>
<tr>
<td>DFT 151</td>
<td>CAD I Advanced Auto CAD</td>
<td>3</td>
</tr>
<tr>
<td>DFT 154</td>
<td>Intro Solid Modeling (ProE)</td>
<td>3</td>
</tr>
<tr>
<td>DFT 170</td>
<td>Engineering Graphics (SolidWorks)</td>
<td>3</td>
</tr>
<tr>
<td>ISC 255</td>
<td>Engineering Economy</td>
<td>3</td>
</tr>
<tr>
<td>MEC 180</td>
<td>Engineering Materials</td>
<td>3</td>
</tr>
<tr>
<td>MEC 265</td>
<td>Fluid Mechanics</td>
<td>3</td>
</tr>
<tr>
<td>MEC 267</td>
<td>Thermal Systems</td>
<td>3</td>
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**Completion Requirements**: 12 Credit Hours

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>DFT 170</td>
<td>Engineering Graphics</td>
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<tr>
<td>MEC 180</td>
<td>Engineering Materials</td>
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<tr>
<td>MEC 265</td>
<td>Fluid Mechanics</td>
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<tr>
<td>MEC 267</td>
<td>Thermal Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

**Completion Requirements**: 12 Credit Hours

**Networking Technology**

The Networking Technology curriculum prepares individuals for employment supporting local- and wide-area networks. Students will learn how to use technologies to provide for data, voice, image, and video communications in business, industry, and education.

Course work includes design, installation, configuration, and management of local- and wide-area network hardware and software. Emphasis is placed on developing proficiency in the use of network management software and the use of hardware such as bridges and routers.

Graduates may find employment in entry-level jobs as local area network managers, network operators, network analysts, and network technicians. Graduates may also be qualified to take certification examinations for various network products, depending on their local program.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
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<tr>
<td>CIV 115</td>
<td>Humanities/Fine Arts Elective</td>
<td>3</td>
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<tr>
<td>HUM 110</td>
<td>Technology and Society</td>
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<tr>
<td>_______</td>
<td>Math Elective</td>
<td>3</td>
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<tr>
<td>_______</td>
<td>Social/Behavioral Science Elective</td>
<td>3</td>
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**General Education Courses**

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<th>Credits</th>
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<tr>
<td>NOS 221</td>
<td>Windows Administration II</td>
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<td>NOS 231</td>
<td>Windows Administration III</td>
<td>3</td>
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<tr>
<td>NET 193</td>
<td>Windows Administration IV</td>
<td>3</td>
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<tr>
<td>NET 198</td>
<td>Windows Administration V</td>
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</table>

**Concentration Electives List**

Select one of the following complete sets of courses

**MCSA Option**

<table>
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<th>Course Title</th>
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<tbody>
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<td>NOS 220</td>
<td>Linux/UNIX Administration I</td>
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<tr>
<td>NOS 221</td>
<td>Linux/UNIX Administration II</td>
<td>3</td>
</tr>
<tr>
<td>NOS 222</td>
<td>Linux/UNIX Administration III</td>
<td>3</td>
</tr>
<tr>
<td>SEC 160</td>
<td>Secure Admin I</td>
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</table>

**CCNP Option**

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<th>Credits</th>
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<td>NET 270</td>
<td>Building Scalable Networks</td>
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<tr>
<td>NET 271</td>
<td>Remote Access Networks</td>
<td>3</td>
</tr>
<tr>
<td>NET 272</td>
<td>Multi-Layer Networks</td>
<td>3</td>
</tr>
<tr>
<td>NET 273</td>
<td>Internetworking Support</td>
<td>3</td>
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</tbody>
</table>

**Red Hat Option**

<table>
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<th>Course Title</th>
<th>Credits</th>
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</thead>
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<td>NOS 220</td>
<td>Linux/UNIX Administration I</td>
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<tr>
<td>NOS 221</td>
<td>Linux/UNIX Administration II</td>
<td>3</td>
</tr>
<tr>
<td>NOS 222</td>
<td>Linux/UNIX Administration III</td>
<td>3</td>
</tr>
<tr>
<td>SEC 160</td>
<td>Secure Admin I</td>
<td>3</td>
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</tbody>
</table>

**Humanities/Fine Arts Elective**

(Select 3.0 hours from the following courses)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUM 110</td>
<td>Technology and Society</td>
<td>3</td>
</tr>
<tr>
<td>HUM 115</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
</tbody>
</table>
NET 273 Internetworking Support .......................................... 3
NET 271 Remote Access Networks ......................................... 3
NET 270 Building Scalable Networks ..................................... 3

Mathematics Elective
(Select 3.0 hours from the following courses)
MAT 145 Analytical Math ......................................................... 3
MAT 145A Analytical Math Lab ............................................... 1
MAT 161 College Algebra .......................................................... 3
MAT 161A College Algebra Lab ............................................... 1
MAT 171 Pre-Calculus Algebra .................................................. 3
MAT 171A Pre-Calculus Algebra Lab ........................................ 1
MAT 121 Algebra/Trigonometry .............................................. 3

Communication Elective
(Select 3.0 hours from the following courses)
ENG 112 Argument-Based Research ........................................ 3
ENG 113 Literature-Based Research ......................................... 3
ENG 114 Prof. Research and Reporting .................................... 3
COM 120 Intro Interpersonal Communication .......................... 3
COM 231 Public Speaking ....................................................... 3

Social/Behavioral Science Elective
(Select 3.0 hours from the following courses)
ECO 251 Prin. Of Microeconomics ......................................... 3
ECO 252 Prin. of Macroeconomics ........................................ 3
PSY 118 Interpersonal Psychology ......................................... 3
PSY 150 General Psychology .................................................. 3
SOC 210 Introduction to Sociology ......................................... 3
SOC 213 Sociology of the Family ........................................... 3
SOC 220 Social Problems ...................................................... 3

NETWORKING TECHNOLOGY: CISCO CERTIFIED NETWORK ASSOCIATE (CCNA) — C25340C
This certificate is designed to prepare students for the Cisco Certified Network Associate (CCNA) examination. Topics include network topologies and design, router configuration and protocols, switching theory, virtual LANS and threaded case studies.

Upon completion of the four-course sequence, students will have the expertise they need to pass the test required to achieve CCNA status. Completion of NET 110 or CIS 282 or its equivalent is required to begin this program.

NET 125 Routing and Switching I ......................................... 3
NET 126 Routing and Switching II ......................................... 3
NET 225 Advanced Router and Switching I .......................... 3
NET 226 Advanced Router and Switching II .......................... 3
Completion Requirements ..................................................... 12 Credit Hours

NETWORKING TECHNOLOGY: CISCO CERTIFIED NETWORK PROFESSIONAL CCNP — C25340I
The Cisco Certified Network Professional (CCNP) certificate provides the student with advanced skills in LAN/WAN networking technologies with an emphasis on Cisco methodology. These courses will provide an in-depth study of theory, as well as practical hands-on lab activities to prepare the student for the CCNP certification objectives. Topics include routing protocols, switching technology, remote access setup and maintenance, building multi-layer networks, and networking troubleshooting.

NET 270 Building Scalable Networks ..................................... 3
NET 271 Remote Access Networks ........................................ 3
NET 272 Multi-Layer Networks ............................................. 3
NET 273 Internetworking Support ........................................ 3
Completion Requirements ..................................................... 12 Credit Hours

NETWORKING TECHNOLOGY: MCSA- MICROSOFT CERTIFIED SYSTEMS ADMINISTRATOR — C25340J
NET 193 Windows Administration V ..................................... 3
NET 198 Windows Administration IV ................................... 3
NOS 130 Windows Single User ............................................. 3
NOS 230 Windows Administration I ...................................... 3
NOS 231 Windows Administration II .................................... 3
NOS 232 Windows Administration III ................................... 3
Completion Requirements .................................................... 18 Credit Hours

Pre-Engineering
Please see the College/University Transfer Section of the Catalog.

Simulation & Game Development
The Simulation and Game Development curriculum provides a broad background in simulation and game development with practical applications in creative arts, visual arts, audio/video technology, creative writing, modeling, design, programming and management.

Students will receive hands-on training in design, 3D modeling, software engineering, database administration and programming for the purpose of creating simulations and games.

Graduates should qualify for employment as designers, artists, animators, programmers, database administrators, testers, quality assurance analysts, engineers and administrators in the entertainment industry, the healthcare industry, engineering, forensics, education, NASA and government agencies.

SIMULATION AND GAME DEVELOPMENT— A25450
General Education Courses
Required Courses
ACA 111 College Student Success ......................................... 1
DRA 126 Storytelling ......................................................... 3
ENG 111 Expository Writing ................................................. 3
ENG 113 Literature-Based Research ...................................... 3
PSY 150 General Psychology ............................................... 3
History Elective ................................................................. 3
Humanities/Fine Arts Elective ............................................. 3
Science Elective ............................................................... 3

Major Courses
SGD 111 Intro. To SGD ......................................................... 3
SGD 112 SGD Design ............................................................ 3
SGD 113 SGD Programming ................................................ 3
SGD 114 3D Modeling .......................................................... 3
SGD 158 SGD Business Management I ................................. 3
SGD 162 SG 3D Animation .................................................. 3
SGD 163 SG Documentation ................................................ 3
SGD 167 SG Ethics ............................................................... 3
SGD 174 SG Level Design ..................................................... 3
SGD 212 SGD Design II ...................................................... 3
SGD 213 SGD Programming II ........................................... 3
SGD 214 3D Modeling II ..................................................... 3
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>SGD 285</td>
<td>SG Software Engineering</td>
<td>3</td>
</tr>
<tr>
<td>SGD 289</td>
<td>SGD Project</td>
<td>2</td>
</tr>
</tbody>
</table>

**Major Electives List I**

Select 3 hours from the following courses

- CTS 118 IS Professional Comm          | 2
- GRD 121 Drawing Fundamentals I        | 2
- SGD 122 SG Database Programming       | 3
- SGD 159 SG Production Management      | 3
- SGD 164 SG Audio/Video                | 3
- SGD 165 SG Character Development      | 3
- SGD 171 Flash SG Programming          | 3
- SGD 192 SG Special Topics             | 2

**Graduation Requirements**... 74 Credit Hours

**MATH ELECTIVE**

- MAT 121 Algebra/Trigonometry I       | 3
- MAT 161 College Algebra              | 3
- MAT 161A College Algebra Lab         | 1
- MAT 171 Precalculus Algebra          | 3
- MAT 171A Precalculus Algebra Lab     | 1

**SCIENCE ELECTIVE**

- PHY 110 Conceptual Physics            | 3
- PHY 110A Conceptual Physics Lab       | 1
- PHY 131 Physics-Mechanics             | 4
- PHY 151 College Physics I             | 4
- BIO 168 Anatomy and Physiology I      | 4

**HISTORY ELECTIVE**

- HIS 111 World Civilizations I         | 3
- HIS 121 Western Civilization I        | 3

**HUMANITY ELECTIVE**

- ART 113 Art Methods and Materials     | 3
- ART 121 Design I                      | 3
- ART 281 Sculpture I                   | 3
- HUM 110 Technology and Society        | 3
- HUM 115 Critical Thinking            | 3
- HUM 120 Cultural Studies              | 3
- HUM 130 Myth in Human Culture         | 3
- HUM 140 History of Architecture       | 3
- HUM 160 Introduction to Film          | 3
- HUM 230 Leadership Development        | 3
- MUS 111 Fundamentals of Music         | 3

**SIMULATION AND GAME DEVELOPMENT — D25450A**

This diploma is designed for individuals seeking employment in the digital game, movie industry, or related companies, as game programmers, programmer trainees, game testers or designers/developers.

Topics include the study of applications in game engines, logic, graphics, game programming API's, game design implementation techniques. Primary emphasis is hands-on training in digital game design/programming that provides a student the ability to adapt as digital game technology evolves. Upon completion, students will have the necessary skills to develop computer games using appropriate tools.

**General Education Courses**

- ACA 111 College Student Success       | 1
- DRA 126 Storytelling                   | 3
- ENG 111 Expository Writing            | 3
- Math Elective                         | 3

**Major Courses**

- SGD 111 Introduction to Simulation and Game Development | 3
- SGD 112 SG Design                         | 3
- SGD 113 SG Programming                    | 3
- SGD 114 3D Modeling                       | 3
- SGD 158 SG Business Management           | 3
- SGD 174 SG Level Design                   | 3
- SGD 212 SG Design II                      | 3
- SGD 213 SG Programming II                 | 3
- SGD 214 3D Modeling II                    | 3
- SGD 285 Software Engineering             | 3
- SGD 289 SGD Project                       | 3

**Major Electives List II**

Select 2 hours from the following courses

- CTS 118 IS Professional Comm           | 2
- GRD 121 Drawing Fundamentals I         | 2
- SGD 122 SG Database Programming        | 3
- SGD 159 SG Production Management       | 3
- SGD 164 SG Audio/Video                 | 3
- SGD 165 SG Character Development       | 3
- SGD 171 Flash SG Programming           | 3
- SGD 192 SG Special Topics              | 2

**Graduation Requirements**... 47 Credit Hours

**MATH ELECTIVE**

- MAT 121 Algebra/Trigonometry I         | 3
- CTS 287 Emerging Technologies          | 3
- SGD 122 SG Database Programming        | 3
- SGD 159 SG Production Management       | 3
- SGD 164 SG Audio/Video                 | 3
- SGD 165 SG Character Development       | 3
- SGD 171 Flash SG Programming           | 3
- SGD 192 SG Special Topics              | 2
- WEB 287 Web E-Portfolio                | 2
Completion Requirements ................................ 18 Credit Hours

**SIMULATION AND GAME DEVELOPMENT — D25450B**

General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<td>ACA 111</td>
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<td>ENG 111</td>
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<td>SGD 163</td>
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<td>SGD 159</td>
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<td>SGD 166</td>
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<td>SGD 116</td>
<td>3</td>
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<tr>
<td>SGD 166</td>
<td>3</td>
</tr>
<tr>
<td>SGD 212</td>
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</table>

Graduation Requirements ................................ 48 Credit Hours

Math Elective

(Select 3.0 hours from the following courses)

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 121</td>
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<td>MAT 161</td>
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<td>MAT 161A</td>
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<tr>
<td>MAT 171</td>
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<tr>
<td>MAT 171A</td>
<td>1</td>
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**SIMULATION AND GAME DEVELOPMENT: Modeling and Animation — C25450A**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
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<td>SGD 111</td>
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<tr>
<td>SGD 114</td>
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<td>SGD 162</td>
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<td>SGD 165</td>
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<td>SGD 214</td>
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Completion Requirements ............................. 18 Credit Hours

**SIMULATION AND GAME DEVELOPMENT: Production — C25450B**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>SGD 111</td>
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<td>SGD 112</td>
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<td>SGD 158</td>
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<td>SGD 159</td>
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</tr>
<tr>
<td>SGD 163</td>
<td>3</td>
</tr>
<tr>
<td>SGD 212</td>
<td>3</td>
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</tbody>
</table>

Completion Requirements ............................. 18 Credit Hours

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**Surveying Technology**

The Surveying Technology curriculum provides training for technicians in the many areas of surveying. Surveyors are involved in land surveying, route surveying, construction surveying, photogrammetry, mapping, global positioning systems, geographical information systems, and other areas of property description and measurements.

Course work includes the communication and computational skills required for boundary, construction, route, and control surveying, photogrammetry, topography, drainage, surveying law, and subdivision design, with emphasis upon applications of electronic data collection and related software including CAD.

Graduates should qualify for jobs as survey party chief, instrument person, surveying technician, highway surveyor, mapper, GPS technician, and CAD operator. Graduates will be prepared to pursue the requirements necessary to become a Registered Land Surveyor in North Carolina.

**SURVEYING TECHNOLOGY — A40380**

General Education Courses

<table>
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<td>MAT 121</td>
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<td>MAT 171</td>
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<tr>
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**Major Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CIV 110</td>
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<tr>
<td>DFT 110</td>
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<td>CIV 211</td>
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<tr>
<td>COE 112</td>
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<td>DFT 119</td>
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<td>EGR 115</td>
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</tr>
<tr>
<td>GIS 111</td>
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<td>SRV 110</td>
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<td>SRV 111</td>
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<td>SRV 220</td>
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<td>SRV 230</td>
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</table>

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2008-2009 | Wake Technical Community College
### Major Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COE  113</td>
<td>Co-op Work Experience I</td>
</tr>
<tr>
<td>COE  114</td>
<td>Co-op Work Experience I</td>
</tr>
<tr>
<td>COE  115</td>
<td>Co-op Work Experience I</td>
</tr>
<tr>
<td>COE  116</td>
<td>Co-op Work Experience II</td>
</tr>
<tr>
<td>COE  117</td>
<td>Co-op Work Experience II</td>
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</tbody>
</table>

### Social/Behavioral Science Elective

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>AN 290</td>
<td>Introduction to Anthropology</td>
</tr>
<tr>
<td>ECO 251</td>
<td>Principles of Microeconomics</td>
</tr>
<tr>
<td>GEO 111</td>
<td>World Regional Geography</td>
</tr>
<tr>
<td>HUM 111</td>
<td>World Civilization I</td>
</tr>
<tr>
<td>HUM 121</td>
<td>Western Civilization I</td>
</tr>
<tr>
<td>HIS 131</td>
<td>American History I</td>
</tr>
<tr>
<td>POL 110</td>
<td>Introduction to Political Science</td>
</tr>
<tr>
<td>PSY 150</td>
<td>General Psychology</td>
</tr>
<tr>
<td>SOC 210</td>
<td>Introduction to Sociology</td>
</tr>
<tr>
<td>SOC 220</td>
<td>Social Problems</td>
</tr>
</tbody>
</table>

### Graduation Requirements

- Social/Behavioral Science Elective: 3 credits
- Humanities/Fine Arts Elective: 3 credits
- Math Elective: 3 credits
- Graduation Requirements: 73 credit hours

### Web Technologies

The Web Technologies curriculum prepares graduates for careers in the information technology area using computers and distributed computing to disseminate and collect information via the web.

Course work in this program covers the terminology and use of computers, network devices, networks, servers, databases, applications, programming languages, as well as web applications, site development and design. Studies will provide opportunity for students to learn related industry standards.

Graduates should qualify for career opportunities as designers, administrators, or developers in the areas of web applications, websites, web services, and related areas of distributed computing.

#### WEB TECHNOLOGIES — A25290

#### General Education Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
</tr>
<tr>
<td>ENG 112</td>
<td>Communication Elective</td>
</tr>
<tr>
<td>ENG 113</td>
<td>Math Elective</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Humanities/Fine Arts Elective</td>
</tr>
<tr>
<td>ENG 115</td>
<td>Social/Behavioral Science Elective</td>
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</table>

#### Major Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>CIS  110</td>
<td>Introduction to Computers</td>
</tr>
<tr>
<td>CIS  115</td>
<td>Introduction to Programming and Logic</td>
</tr>
<tr>
<td>CTS  115</td>
<td>Information Systems Business Concepts</td>
</tr>
<tr>
<td>DBA  110</td>
<td>Database Concepts</td>
</tr>
<tr>
<td>NET  110</td>
<td>Networking Concepts</td>
</tr>
<tr>
<td>NOS  110</td>
<td>Operating System Concepts</td>
</tr>
<tr>
<td>SEC  110</td>
<td>Security Concepts</td>
</tr>
<tr>
<td>WEB  111</td>
<td>Introduction to Web Graphics</td>
</tr>
<tr>
<td>WEB  115</td>
<td>Web Markup and Scripting</td>
</tr>
<tr>
<td>WEB  120</td>
<td>Introduction to Internet Multimedia</td>
</tr>
<tr>
<td>WEB  140</td>
<td>Web Development Tools</td>
</tr>
<tr>
<td>WEB  180</td>
<td>Active Server Pages</td>
</tr>
<tr>
<td>WEB  210</td>
<td>Web Design</td>
</tr>
<tr>
<td>WEB  230</td>
<td>Implementing Web Servers</td>
</tr>
<tr>
<td>WEB  250</td>
<td>Database-Driven Websites</td>
</tr>
<tr>
<td>WEB  260</td>
<td>E-Commerce Infrastructure</td>
</tr>
</tbody>
</table>

#### Major Electives List 1

Select 3 hours from the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COE  113</td>
<td>Co-op Work Experience I</td>
</tr>
<tr>
<td>CSC  141</td>
<td>Visual C++ Programming</td>
</tr>
<tr>
<td>WEB  185</td>
<td>ColdFusion Programming</td>
</tr>
<tr>
<td>WEB  186</td>
<td>XML Technology</td>
</tr>
</tbody>
</table>

#### Major Electives List 2

Select 3 hours from the following courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRA  110</td>
<td>Typography I</td>
</tr>
<tr>
<td>GRA  151</td>
<td>Computer Design Basics</td>
</tr>
<tr>
<td>GRA  152</td>
<td>Computer Design Tech I</td>
</tr>
<tr>
<td>WEB  220</td>
<td>Advanced Multimedia</td>
</tr>
<tr>
<td>WEB  289</td>
<td>Internet Technologies Project</td>
</tr>
<tr>
<td>WEB  293</td>
<td>Seminar/Web Technologies</td>
</tr>
<tr>
<td>WEB  298</td>
<td>Seminar: Web Technologies</td>
</tr>
</tbody>
</table>

#### Graduation Requirements

- Graduation Requirements: 73 credit hours
Humanities/Fine Arts Elective
(Select 3.0 hours from the following courses)
HUM 110 Technology and Society ............................................ 3
HUM 115 Critical Thinking ....................................................... 3
HUM 160 Introduction to Film .................................................. 3
HUM 230 Leadership Development ............................................ 3
ART 111 Art Appreciation ....................................................... 3
ART 114 Art History Survey I ................................................... 3
MUS 110 Music Appreciation .................................................. 3
MUS 111 Fundamentals of Music ............................................... 3
REL 110 World Religions ......................................................... 3
REL 111 Eastern Religions ......................................................... 3
REL 112 Western Religions ...................................................... 3

Mathematics Elective
(Select 3.0 hours from the following courses)
MAT 145 Analytical Math .......................................................... 3
MAT 145A Analytical Math Lab ................................................. 1
MAT 161 College Algebra .......................................................... 3
MAT 161A College Algebra Lab .................................................. 1
MAT 171 Pre-Calculus Algebra .................................................. 3
MAT 171A Pre-Calculus Algebra Lab .......................................... 1
MAT 121 Algebra/Trigonometry ................................................ 3

Communication Elective
(Select 3.0 hours from the following courses)
ENG 112 Argument-Based Research ......................................... 3
ENG 113 Literature-Based Research ........................................... 3
ENG 114 Prof. Research and Reporting ..................................... 3
COM 120 Intro Interpersonal Communication ................................ 3
COM 231 Public Speaking ......................................................... 3

Social/Behavioral Science Elective
(Select 3.0 hours from the following courses)
ECO 251 Prin. Of Microeconomics .......................................... 3
ECO 252 Prin. of Macroeconomics ........................................... 3
PSY 118 Interpersonal Psychology ............................................ 3
PSY 150 General Psychology .................................................. 3
SOC 210 Introduction to Sociology ............................................ 3
SOC 213 Sociology of the Family .............................................. 3
SOC 220 Social Problems ......................................................... 3

WEB TECHNOLOGIES:
WEB DEVELOPER — C25290A — Online
WEB 110 Internet/Web Fundamentals ........................................ 3
WEB 115 Web Markup and Scripting ........................................ 3
WEB 180 Active Server Programming ....................................... 3
WEB 182 PHP Programming ..................................................... 3
WEB 186 XML Technology ....................................................... 3
WEB 230 Web Servers Implementation ...................................... 3
Completion Requirements .................................................... 18 Credit Hours

WEB TECHNOLOGIES:
E-COMMERCE PROGRAMMING —
C25290B — Online
WEB 115 Web Markup and Scripting ........................................ 3
WEB 180 Active Server Pages .................................................. 3
WEB 182 PHP Programming ..................................................... 3
WEB 250 Database-Driven Websites ........................................ 3
WEB 260 E-Commerce Infrastructure ....................................... 3
Completion Requirements .................................................... 15 Credit Hours
General Education

Dean Gayle Greene
Phone: 919-532-5522
Email: dggreene@waketech.edu

Associate In General Education
(A.G.E.) — A10300

OFFICIAL CURRICULUM SCHEDULE

COURSE REQUIREMENTS CREDIT HOURS

**English/Communications** ........................................... 6
ENG 111 Expository Writing (3 0 3)
ENG 114 Professional Research and Reporting (3 0 3)

**Humanities/Fine Arts** ................................................. 3
Select from courses in art, foreign language, humanities, literature, music, philosophy, and religion.

**Social/Behavioral Sciences** ....................................... 3
Select from courses in economics, history, political science, psychology, and sociology.

**Natural Sciences/Mathematics** .................................. 3
Select from courses in biology, chemistry, geology, physics, and mathematics.

**Computer Science** ..................................................... 2
CIS 111 Basic PC Literacy (1 2 2)

**Electives** .................................................................... 47
Select from associate degree level courses in English/communications, humanities/fine arts, social/behavioral sciences, and natural sciences/mathematics, or any specialty courses as selected by the student and approved by the student's advisor.

Graduation Requirements .......................... 64 Credit Hours

ASSOCIATE IN GENERAL EDUCATION

**Vocational and Technical Instructors’ Option**
This option is designed for teachers of vocational and technical programs in technical colleges, trade schools, high schools, and similar institutions, as well as for practitioners of specific vocations. In addition to completing the core requirements for the Associate in General Education degree, the student may receive credit for previous training, experience, and formal study in the student's area of specialization. A maximum of sixteen hours of elective credit may be granted as follows:

I. Sixteen semester hours of credit for full-time trade school instruction (twelve months/1440 hours) in one special skilled area. Certified by transcript, diploma, or letter from trade school. Maximum sixteen semester hours of credit.

II. One semester hour of credit per ninety hours of full-time trade school instruction for programs of less than one-year duration. Certified by transcript, diploma, or letter from trade school. Maximum sixteen semester hours of credit.

III. One semester hour of credit per sixty hours of special short course instruction by a company-sponsored school. Certified by diploma, certificate, or letter from company school. Maximum three semester hours of credit.

IV. Three semester hours of credit for a full year of employment (outside of Wake Technical Community College) in a situation where teaching was the primary employment. Maximum three semester hours of credit.

V. Five semester hours of credit for each full year of employment at Wake Technical Community College with teaching the specialty courses as the primary responsibility. Maximum fifteen semester hours of credit.

VI. One semester hour of credit for each full year of employment in the specialty occupation qualified to teach. Maximum five semester hours of credit.

Credits earned in industrial and/or vocational programs offered by regionally-accredited, collegiate-level institutions are acceptable in meeting requirements in the area of specialization.

The student will be required to provide sufficient documentation to substantiate the suitability of previous training, experience, and formal study for credit.
Health Sciences

Dean Dianne Hinson
Phone: 919-747-0007 or 866-5000
Email: dbhinson@waketech.edu

DEGREES
Associate Degree Nursing  A45120
Dental Hygiene  A45260
Emergency Medical Science  A45340
General Occupational Technology A55280
Human Services Technology  A45380
Human Services Technology/ Developmental Disabilities  A4538A
Human Services Technology/Substance Abuse  A4538E
Medical Assisting  A45400
Medical Laboratory Technology  A45420
Radiography  A45700

DIPLOMAS
Computed Tomography and Magnetic Resonance Imaging Technology  D45200
Dental Assisting  D45240
Medical Assisting  D45400
Pharmacy Technology  D45580
Surgical Technology  D45740
Therapeutic Massage  D45750

CERTIFICATES
Computed Tomography Technology  C45200A
Human Services Technology  C45380
Human Services Technology: Developmental Disabilities  C4538A
Human Services Technology: Substance Abuse  C4538E
Magnetic Resonance Imaging Technology  C45200B
Phlebotomy  C45600

COLLABORATIVE AGREEMENTS
Interventional Cardiac & Vascular Technology --D45410
  Collaborative with Johnston, Edgecombe, and Fayetteville Community Colleges
**Computed Tomography & Magnetic Resonance Imaging Technology**

The Computed Tomography and Magnetic Resonance Imaging Technology curriculum, a specialty for radiographers, prepares the individual to use specialized equipment to visualize cross-sectional anatomical structures and aid physicians in the demonstration of pathologies and disease processes. Individuals entering this curriculum must be registered or registry eligible radiologic technologists by the American Registry of Radiologic Technologists.

Course work prepares the technologist to provide patient care and perform studies utilizing imaging equipment, professional communication, and quality assurance in scheduled and emergency procedures through academic and clinical studies.

Graduates may be eligible to sit for the American Registry of Radiologic Technologists Advanced-Level testing in Computed Tomography and/or Magnetic Resonance Imaging examinations. They may find employment in facilities which perform these imaging procedures.

**COMPUTED TOMOGRAPHY AND MAGNETIC RESONANCE IMAGING TECHNOLOGY — D45200**

**General Education Courses**
- ENG 111 Expository Writing ........................................... 3
- HUM 110 Technology and Society ..................................... 3
- or
- HUM 115 Critical Thinking ........................................... 3

**Major Courses**
- CAT 210 CT Physics and Equipment ..................................... 3
- CAT 211 CT Procedures ................................................. 4
- CAT 231 CT Clinical Practicum ......................................... 11
- MRI 210 MRI Physics and Equipment .................................. 3
- MRI 211 MRI Procedures ................................................. 4
- MRI 225 MRI Clinical Practicum ......................................... 5
- MRI 231 MRI Clinical Practicum ......................................... 11

**Graduation Requirements ............................................. 47 Credit Hours**

**COMPUTED TOMOGRAPHY TECHNOLOGY — C45200A**

- CAT 210 CT Physics and Equipment ..................................... 3
- CAT 211 CT Procedures ................................................. 4
- CAT 231 CT Clinical Practicum ......................................... 11

**Completion Requirements ............................................. 18 Credit Hours**

**MAGNETIC RESONANCE IMAGING TECHNOLOGY — C45200B**

- MRI 210 MRI Physics and Equipment ................................... 3
- MRI 211 MRI Procedures ................................................. 4
- MRI 231 MRI Clinical Practicum ......................................... 11

**Completion Requirements ............................................. 18 Credit Hours**

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**Dental Assisting**

The Dental Assisting curriculum prepares individuals to assist the dentist in the delivery of dental treatment and to function as integral members of the dental team while performing chairside and related office and laboratory procedures.

Course work includes instruction in general studies, biomedical sciences, dental sciences, clinical sciences, and clinical practice. A combination of lecture, laboratory, and clinical experiences provide students with knowledge in infection/hazard control, radiography, dental materials, preventive dentistry, and clinical procedures.

Graduates may be eligible to take the Dental Assisting National Board Examination to become Certified Dental Assistants. As a Dental Assistant II, defined by the Dental Laws of North Carolina, graduates work in dental offices and other related areas.

**DENTAL ASSISTING — D45240**

**General Education Courses**
- BIO 106 Introduction to Anatomy/Physiology/Microbiology .......... 3
- COM 120 Interpersonal Communication .................................. 3
- ENG 111 Expository Writing ............................................. 3
- PSY 118 Interpersonal Psychology ....................................... 3

**Major Courses**
- DEN 100 Basic Orofacial Anatomy ...................................... 2
- DEN 101 Preclinical Procedures ......................................... 7
- DEN 102 Dental Materials ............................................... 5
- DEN 103 Dental Sciences .................................................. 2
- DEN 104 Dental Health Education ........................................ 3
- DEN 105 Practice Management ........................................... 2
- DEN 106 Clinical Practice I .............................................. 5
- DEN 107 Clinical Practice II .............................................. 5
- DEN 111 Infection/Hazard Control ...................................... 2
- DEN 112 Dental Radiography ............................................ 3

**Graduation Requirements ............................................. 48 Credit Hours**

**Dental Hygiene**

The Dental Hygiene curriculum provides individuals with the knowledge and skills to assess, plan, implement, and evaluate dental hygiene care for the individual and the community.

Students will learn to prepare the operatory, take patient histories, note abnormalities, plan care, teach oral hygiene, clean teeth, take x-rays, apply preventive agents, complete necessary chart entries, and perform other procedures related to dental hygiene care.

Graduates of this program may be eligible to take national and state/regional examinations for licensure which are required to practice dental hygiene. Employment opportunities include dental offices, clinics, schools, public health agencies, industry, and professional education.
### DENTAL HYGIENE — A45260

#### General Education Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>PSTY 150</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC 210</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>CHM 130</td>
<td>General, Organic and Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>COM 120</td>
<td>Interpersonal Communication</td>
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#### Humanities/Fine Arts Elective

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENG 114</td>
<td>Professional Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

#### General Education Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BIO 163</td>
<td>Basic Anatomy</td>
<td>5</td>
</tr>
<tr>
<td>BIO 223</td>
<td>Dental Office Emergencies</td>
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#### Major Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS 110</td>
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<tr>
<td>EMS 120</td>
<td>Intermediate Interventions</td>
<td>3</td>
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<tr>
<td>EMS 121</td>
<td>EMS Clinical Practicum I</td>
<td>2</td>
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<tr>
<td>EMS 125</td>
<td>EMS Instructor Methodology</td>
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<tr>
<td>EMS 130</td>
<td>Pharmacology I for EMS</td>
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</tr>
<tr>
<td>EMS 141</td>
<td>Advanced Airway Management</td>
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<tr>
<td>EMS 140</td>
<td>Rescue Scene Management</td>
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</tr>
<tr>
<td>EMS 150</td>
<td>Emergency Vehicles and EMS Communication</td>
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</tr>
<tr>
<td>EMS 210</td>
<td>Advanced Patient Assessment</td>
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<tr>
<td>EMS 220</td>
<td>Cardiology</td>
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<td>EMS 221</td>
<td>EMS Clinical Practicum II</td>
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<tr>
<td>EMS 230</td>
<td>Pharmacology II for EMS</td>
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<td>EMS 231</td>
<td>EMS Clinical Practicum III</td>
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<td>EMS 235</td>
<td>EMS Management</td>
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<tr>
<td>EMS 240</td>
<td>Special Needs Patients</td>
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<tr>
<td>EMS 241</td>
<td>EMS Clinical Practicum IV</td>
<td>3</td>
</tr>
<tr>
<td>EMS 250</td>
<td>Advanced Medical Emergencies</td>
<td>3</td>
</tr>
<tr>
<td>EMS 260</td>
<td>Advanced Trauma Emergencies</td>
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<td>EMS 270</td>
<td>Life Span Emergencies</td>
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<tr>
<td>EMS 285</td>
<td>EMS Capstone</td>
<td>2</td>
</tr>
</tbody>
</table>

#### Graduation Requirements

- Total Credit Hours: 73

### General Occupational Technology

#### Day and Evening

The General Occupational Technology curriculum provides individuals with an opportunity to upgrade their skills and to earn an associate degree by taking courses suited for their occupational interests and/or needs.

The curriculum content will be individualized for students according to their occupational interests and needs. A program of study for each student will be selected from associate degree-level courses offered by the College.

Graduates will become more effective workers, better qualified for advancements within their field of employment, and become qualified for a wide range of entry-level employment opportunities.

Students must consult with their advisors prior to registration.

### GENERAL OCCUPATIONAL TECHNOLOGY — A55280

#### General Education Requirements (15 to 18 Credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENG 112</td>
<td>Argument-Based Research</td>
<td>3</td>
</tr>
<tr>
<td>ENG 113</td>
<td>Literature-Based Research</td>
<td>3</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Professional Research and Reporting</td>
<td>3</td>
</tr>
<tr>
<td>BIO 106</td>
<td>Introduction to Anatomy/Physiology/Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>BIO 161</td>
<td>Introductory to Human Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIO 163</td>
<td>Basic Anatomy and Physiology</td>
<td>5</td>
</tr>
<tr>
<td>BIO 165</td>
<td>Anatomy and Physiology I</td>
<td>4</td>
</tr>
</tbody>
</table>

#### One of the following ENG courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY 110</td>
<td>Life Span Development</td>
<td>3</td>
</tr>
<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY 150</td>
<td>General Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

#### One of the following BIO courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUM 110</td>
<td>Technology and Society</td>
<td>3</td>
</tr>
<tr>
<td>HUM 115</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>PHI 240</td>
<td>Introduction to Ethics</td>
<td>3</td>
</tr>
</tbody>
</table>
**Human Services Technology**

The Human Services Technology curriculum prepares students for entry-level positions in institutions and agencies that provide social, community, and educational services. Along with core courses, students take courses that prepare them for specialization in specific human service areas.

Students will take courses from a variety of disciplines. Emphasis in core courses is placed on development of relevant knowledge, skills, and attitudes in human services. Fieldwork experience will provide opportunities for application of knowledge and skills learned in the classroom.

Graduates should qualify for positions in mental health, child care, family services, social services, rehabilitation, correction, and educational agencies. Graduates choosing to continue their education may select from a variety of transfer programs at senior public and private institutions.

**HUMAN SERVICES TECHNOLOGY — A45380**

**General Education Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 161</td>
<td>Introduction to Human Biology</td>
</tr>
</tbody>
</table>

**Major Courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSE 110</td>
<td>Introduction to Human Services</td>
</tr>
<tr>
<td>HSE 115</td>
<td>Health Care Concepts</td>
</tr>
<tr>
<td>HSE 220</td>
<td>Case Management</td>
</tr>
<tr>
<td>HSE 225</td>
<td>Crisis Intervention</td>
</tr>
<tr>
<td>HSE 242</td>
<td>Abnormal Psychology</td>
</tr>
<tr>
<td>HSE 250</td>
<td>Financial Services</td>
</tr>
<tr>
<td>HSE 255</td>
<td>Health Problems and Prevention</td>
</tr>
<tr>
<td>PSY 110</td>
<td>Life Span Development</td>
</tr>
</tbody>
</table>

**Graduation Requirements**

- 64 Credit Hours

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**HEALTH SCIENCES**

**Other Course Requirements (46 to 49 Credits)**

Select from the following list. Do not select courses taken to satisfy the General Education Requirements above.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACA 111</td>
<td>College Student Success</td>
</tr>
<tr>
<td>ACA 115</td>
<td>Success and Study Skills</td>
</tr>
<tr>
<td>ACA 118</td>
<td>College Study Skills</td>
</tr>
<tr>
<td>BIO 106</td>
<td>Introduction to Anatomy/Physiology/Microbiology</td>
</tr>
<tr>
<td>BIO 155</td>
<td>Nutrition</td>
</tr>
<tr>
<td>BIO 161</td>
<td>Introduction to Human Measurement</td>
</tr>
<tr>
<td>BIO 163</td>
<td>Basic Anatomy and Physiology</td>
</tr>
<tr>
<td>BIO 165</td>
<td>Anatomy and Physiology I</td>
</tr>
<tr>
<td>BIO 166</td>
<td>Anatomy and Physiology II</td>
</tr>
<tr>
<td>BIO 175</td>
<td>General Microbiology</td>
</tr>
<tr>
<td>BIO 271</td>
<td>Pathophysiology</td>
</tr>
<tr>
<td>CHM 130</td>
<td>General, Organic, and Biochemistry</td>
</tr>
<tr>
<td>CHM 131</td>
<td>Introduction to Chemistry</td>
</tr>
<tr>
<td>CHM 151</td>
<td>General Chemistry</td>
</tr>
<tr>
<td>CIS 110</td>
<td>Introduction to Computers</td>
</tr>
<tr>
<td>CIS 111</td>
<td>Basic PC Literacy</td>
</tr>
<tr>
<td>COM 120</td>
<td>Interpersonal Communication</td>
</tr>
<tr>
<td>COM 231</td>
<td>Public Speaking</td>
</tr>
<tr>
<td>HUM 110</td>
<td>Humanities/Fine Arts Elective</td>
</tr>
<tr>
<td>MAT 110</td>
<td>Mathematical Measurement</td>
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<td>MAT 115</td>
<td>Mathematical Models</td>
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<tr>
<td>MAT 161</td>
<td>College Algebra</td>
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<tr>
<td>MAT 161A</td>
<td>College Algebra Lab</td>
</tr>
<tr>
<td>OST 141</td>
<td>Medical Terms I – Medical Office</td>
</tr>
<tr>
<td>OST 142</td>
<td>Medical Terms II – Medical Office</td>
</tr>
<tr>
<td>OST 149</td>
<td>Medical Legal Issues</td>
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<td>OST 151</td>
<td>Medical Office Transcription I</td>
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<td>PSY 110</td>
<td>Life Span Development</td>
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<tr>
<td>PSY 118</td>
<td>Interpersonal Psychology</td>
</tr>
<tr>
<td>PSY 150</td>
<td>General Psychology</td>
</tr>
<tr>
<td>PSY 241</td>
<td>Developmental Psychology</td>
</tr>
<tr>
<td>PSY 281</td>
<td>Abnormal Psychology</td>
</tr>
<tr>
<td>SOC 210</td>
<td>Introduction to Sociology</td>
</tr>
<tr>
<td>SOC 213</td>
<td>Sociology of the Family</td>
</tr>
<tr>
<td>SOC 220</td>
<td>Social Problems</td>
</tr>
</tbody>
</table>

**Graduation Requirements**

- 71 Credit Hours

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**HUMAN SERVICES TECHNOLOGY — C45380**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSE 110</td>
<td>Introduction to Human Services</td>
</tr>
<tr>
<td>HSE 115</td>
<td>Health Care Concepts</td>
</tr>
<tr>
<td>HSE 220</td>
<td>Case Management</td>
</tr>
<tr>
<td>HSE 250</td>
<td>Financial Services</td>
</tr>
<tr>
<td>SWK 113</td>
<td>Working with Diversity</td>
</tr>
</tbody>
</table>

**Completion Requirements**

- 15 Credit Hours

**Human Services Technology/Developmental Disabilities**

The Human Services Technology/Developmental Disabilities concentration is designed to train technicians to work with children and adults with physical, mental, and emotional disabilities. Students will specialize in the areas of developmental disabilities and mental retardation.

Students will gain an understanding of the handicapping effects of developmental disabilities in medical, psychological, social, educational, vocational, and economic terms. Fieldwork and clinical experience in community agencies providing comprehensive services to disabled persons and their families will be provided.
Graduates should qualify for positions as substance abuse counselors, DUI counselors, halfway house workers, residential facility employees, and substance education specialists. With educational and clinical experiences, graduates can obtain certification by the North Carolina Substance Abuse Board.

**HUMAN SERVICES TECHNOLOGY/ SUBSTANCE ABUSE — A4538E**

**General Education Courses**
- BIO 161 Introduction to Human Biology .................. 3
- ENG 111 Expository Writing ................................ 3
- ENG 112 Argument-Based Research .................. 3
- SOC 210 Introduction to Sociology .................. 3
- Humanities/Fine Arts Elective .................. 3

**Major Courses**
- CIS 111 Basic PC Literacy .................................. 2
- COE 111 Co-op Work Experience I .................. 1
- COE 115 Work Experience Seminar I .................. 1
- DDT 110 Developmental Disabilities .................. 3
- DDT 120 Teaching the Developmentally Disabled ..... 3
- DDT 210 DDT Health Issues .......................... 3
- HSE 110 Introduction to Human Services .................. 3
- HSE 112 Group Process I .................................. 2
- HSE 115 Health Care Concepts .......................... 4
- HSE 123 Interviewing Techniques .................. 3
- HSE 125 Counseling .................................. 3
- HSE 210 Human Services Issues .................. 2
- HSE 220 Program Planning Process .................. 3
- HSE 225 Crisis Intervention .................. 3
- HSE 242 Family Systems .................................. 3
- HSE 250 Financial Services .................................. 2
- PSY 150 General Psychology .................................. 3
- PSY 241 Developmental Psychology .................. 3
- PSY 281 Abnormal Psychology .......................... 3
- SWK 113 Working with Diversity .......................... 3

**Completion Requirements** ................................ 73 Credit Hours

**HUMAN SERVICES TECHNOLOGY — C4538A**

**Major Courses**
- HSE 110 Introduction to Human Services .................. 3
- HSE 115 Health Care Concepts .................................. 4
- HSE 220 Case Management .................................. 3
- DDT 110 Developmental Disabilities .................. 3
- DDT 120 Teaching the Developmentally Disabled ..... 3

**Completion Requirements** ................................ 16 Credit Hours

**Human Services Technology / Substance Abuse**

The Human Services Technology/Substance Abuse concentration prepares students to assist in drug and alcohol counseling, prevention-oriented educational activities, rehabilitation with recovering clients, managing community-based programs, counseling in residential facilities, and pursuit of four-year degrees.

Course work includes classroom and experiential activities oriented toward an overview of chemical dependency, psychological/sociological process, the twelve Core Functions, intervention techniques with individuals in groups, and follow-up activities with recovering clients.
Medical Assisting

The Medical Assisting curriculum prepares multi-skilled health care professionals qualified to perform administrative, clinical, and laboratory procedures.

Course work includes instruction in scheduling appointments, coding and processing insurance accounts, billing, collections, computer operations; assisting with examinations/treatments, performing routine laboratory procedures, electro-cardiography, supervised medication administration; and ethical/legal issues associated with patient care.

The Medical Assisting Diploma program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) upon the recommendation of the Curriculum Review Board of The American Association of Medical Assistants Endowment (CRB-AAMAE).

Graduates of CAAHEP accredited medical assisting diploma program may be eligible to sit for the American Association of Medical Assistants’ Certification Examination to become Certified Medical Assistants. Employment opportunities include physicians’ offices, health maintenance organizations, health departments, and out patient clinics.

**MEDICAL ASSISTING Diploma — D45400**

**General Education Courses**
- ENG 111 Expository Writing ............................... 3
- MAT 110 Mathematical Measurement ....................... 3

**Major Courses**
- BIO 161 Intro to Human Biology ...................... 3
- MED 110 Orientation to Medical Assisting .......... 1
- MED 118 Medical Law and Ethics ...................... 2
- MED 121 Medical Terminology I ..................... 3
- MED 122 Medical Terminology II ..................... 3
- MED 130 Administrative Office Procedures I ....... 2
- MED 262 Laboratory Procedures I .................... 5
- MED 260 Medical Clinical Externship ................. 5
- MED 262 Clinical Perspectives ......................... 1
- MED 264 Medical Assisting Overview ................ 2
- MED 276 Patient Education .............................. 2

**Graduation Requirements** .......................... 44 Credit Hours

**MEDICAL ASSISTING Degree — A45400**

Students who have successfully completed the one-year Medical Assisting diploma can choose to continue their education by completing the Medical Assisting degree. The Medical Assisting associate degree completion program is designed for Medical Assistants who desire an associate degree for career advancement or transfer purposes. Please note that to be eligible for the Medical Assisting degree, a student must have completed BIO 163, which has a prerequisite of chemistry. If a student completed BIO 161 successfully in their diploma program, they will still need to complete BIO 163.

**Additional Courses Required for the Medical Assisting Degree — A45400**

**Additional General Education Courses**
- BIO 155 Nutrition ............................................. 3
- BIO 163 Basic Anatomy and Physiology ................. 5
- CIS 111 Basic PC literacy .................................... 2
- SPA 120 Spanish for the Workplace ..................... 3

**Choose one:**
- ENG 112 Argument-Based Research .................. 3
- COM 120 Interpersonal Communication .............. 3
- Humanities/Fine Art elective ........................... 3

**Additional Major Courses**
- MED 270 Symptomatology .................................. 3
- MED 272 Drug Therapy ...................................... 3
- MED 232 Medical Insurance Coding .................... 2

**Graduation Requirements** .......................... 71 Credit Hours

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Medical Laboratory Technology

The Medical Laboratory Technology curriculum prepares individuals to perform clinical laboratory procedures in chemistry, hematology, microbiology, and immunohematology that may be used in the maintenance of health and diagnosis/treatment of disease.

Course work emphasizes mathematical and scientific concepts related to specimen collection, laboratory testing and procedures, quality assurance, and recording/interpreting findings involving tissues, blood, and body fluids.

Graduates may be eligible to take examinations given by the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists or the National Credentialing Agency. Employment opportunities include laboratories in hospitals, medical offices, industry, and research facilities.

**MEDICAL LABORATORY TECHNOLOGY — A45420**

**General Education Courses**
- ENG 111 Expository Writing ............................... 3
- ENG 112 Argument-Based Research .................. 3
- MAT 115 Mathematical Models ......................... 3
- PSY 150 General Psychology ............................ 3

**Major Courses**
- BIO 163 Basic Anatomy and Physiology ................. 5
- CIS 111 Basic PC Literacy .................................... 2
- MLT 110 Introduction to MLT ............................ 3
- MLT 111 Urinalysis and Body Fluids .................... 2
- MLT 115 Laboratory Calculations ....................... 2
- MLT 118 Medical Lab Chemistry ......................... 3
- MLT 120 Hematology/Hemostasis I .................... 4
- MLT 125 Immunohematology I ............................ 5
- MLT 130 Clinical Chemistry I ............................ 4
- MLT 140 Introduction to Microbiology ................. 3
- MLT 217 Professional Issues ............................. 1
- MLT 220 Hematology/Hemostasis II .................... 3
- MLT 230 Clinical Chemistry II ............................ 3
- MLT 240 Special Clinical Microbiology ............... 3
- MLT 254 MLT Practicum I .................................. 4
- MLT 266 MLT Practicum II .................................. 6
- MLT 276 MLT Practicum III .................................. 6
- MLT 280 Special Practice Lab ............................. 1

**Graduation Requirements** .......................... 75 Credit Hours
**Associate Degree Nursing**

The Associate Degree Nursing (non-integrated) curriculum provides individuals with the knowledge and skills necessary to provide nursing care to clients and groups of clients throughout the life span in a variety of settings.

Courses will include content related to the nurse’s role as provider of nursing care, as manager of care, as member of the discipline of nursing, and as a member of the interdisciplinary team.

Graduates of this program are eligible to apply to take the National Council Licensure Examination (NCLEX-RN), which is required for practice as a Registered Nurse. Employment opportunities include hospitals, long-term care facilities, clinics, physician's offices, industry, and community agencies.

**ASSOCIATE DEGREE NURSING — A45120**

<table>
<thead>
<tr>
<th>General Education Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 165 Anatomy and Physiology I</td>
</tr>
<tr>
<td>BIO 166 Anatomy and Physiology II</td>
</tr>
<tr>
<td>ENG 111 Expository Writing</td>
</tr>
<tr>
<td>ENG 112 Argument-Based Research</td>
</tr>
<tr>
<td>PSY 110 Life Span Development</td>
</tr>
<tr>
<td>Humanities/Fine Arts Elective</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 155 Nutrition</td>
</tr>
<tr>
<td>BIO 175 General Microbiology</td>
</tr>
<tr>
<td>BIO 271 Pathophysiology</td>
</tr>
<tr>
<td>NUR 115 Fundamentals of Nursing</td>
</tr>
<tr>
<td>NUR 116 Nursing of Older Adults</td>
</tr>
<tr>
<td>NUR 117 Pharmacology</td>
</tr>
<tr>
<td>NUR 125 Maternal-Child Nursing</td>
</tr>
<tr>
<td>NUR 133 Nursing Assessment</td>
</tr>
<tr>
<td>NUR 135 Adult Nursing I</td>
</tr>
<tr>
<td>NUR 136 Adult Nursing II</td>
</tr>
</tbody>
</table>

**Graduation Requirements** 75 Credit Hours

**Pharmacy Technology**

The Pharmacy Technology program prepares individuals to become pharmacy technicians. These allied health professionals assist and support licensed pharmacists in providing medications and other health care products to patients. Pharmacy technicians maintain patient’s records; fill prescriptions; maintain inventories; set up, package, and label medication doses; prepare solutions and intravenous additives; and perform clerical duties, including insurance forms and forms required by third-party payers.

Students will obtain a broad knowledge of the actions and uses of drugs, pharmacology, pharmaceutical calculations, anatomy and physiology, drug delivery systems, pharmacy administration, and medical terminology and abbreviations through the course work. Through the simulated pharmacy technology laboratory activities and the clinical experiences, students will increase their management, organizational, interpersonal, customer relations, computer and communication skills as well as their skills in performing pharmacy-related functions. The clinical practice will take place in medical centers and retail pharmacies. The Pharmacy Technology Program has been designed to meet the accreditation standards of the American Society of Health-System Pharmacists.

Graduates may be employed in hospitals, nursing homes, private and chain drug stores, research laboratories, wholesale drug companies, and pharmaceutical manufacturing facilities. Graduates will qualify to take the National Certification Examination developed by the Pharmacy Technician Certification Board.

The Pharmacy Technology program is a collaborative program offered by Johnston Community College and Wake Technical Community College.

**PHARMACY TECHNOLOGY — D45580**

<table>
<thead>
<tr>
<th>General Education Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACA 111 College Success</td>
</tr>
<tr>
<td>ENG 111 Expository Writing</td>
</tr>
<tr>
<td>BIO 163 Basic Anatomy and Physiology</td>
</tr>
<tr>
<td>PSY 150 General Psychology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHM 110 Introduction to Pharmacy</td>
</tr>
<tr>
<td>PHM 111 Pharmacy Practice I</td>
</tr>
<tr>
<td>PHM 115 Pharmacy Calculations</td>
</tr>
<tr>
<td>PHM 118 Sterile Products</td>
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<tr>
<td>PHM 120 Pharmacy Calculations I</td>
</tr>
<tr>
<td>PHM 125 Pharmacy Calculations II</td>
</tr>
<tr>
<td>PHM 132 Pharmacy Clinical</td>
</tr>
<tr>
<td>PHM 136 Pharmacy Clinical</td>
</tr>
<tr>
<td>PHM 140 Trends in Pharmacy</td>
</tr>
<tr>
<td>PHM 155 Community Pharmacy</td>
</tr>
</tbody>
</table>

**Graduation Requirements** 45 Credit Hours

**Phlebotomy**

- Day Only

The Phlebotomy curriculum prepares individuals to obtain blood and other specimens for the purpose of laboratory analysis.

Course work includes proper specimen collection and handling, communication skills, and maintaining patient data.

Graduates may qualify for employment in hospitals, clinics, physicians’ offices, and other health care settings and may be eligible for national certification as phlebotomy technicians.

The Phlebotomy program is a one semester program offered each Fall and Spring semester.

**PHLEBOTOMY — C45600**

<table>
<thead>
<tr>
<th>Completion Requirements</th>
<th>12 Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBT 100 Phlebotomy Technology</td>
<td>6</td>
</tr>
<tr>
<td>PBT 101 Phlebotomy Practicum</td>
<td>3</td>
</tr>
<tr>
<td>PSY 118 Interpersonal Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>
Radiography

The Radiography curriculum prepares the graduate to be a radiographer, a skilled health care professional who uses radiation to produce images of the human body.

Course work includes clinical rotations to area health care facilities, radiographic exposure, image processing, radiographic procedures, physics, pathology, patient care and management, radiation protection, quality assurance, anatomy and physiology, and radiobiology.

Graduates of accredited programs are eligible to apply to take the American Registry of Radiologic Technologists' national examination for certification and registration as medical radiographers. Graduates may be employed in hospitals, clinics, physicians' offices, medical laboratories, government agencies, and industry.

RADIOGRAPHY — A45700

General Education Courses
BIO 163 Basic Anatomy and Physiology ........................................ 5
ENG 111 Expository Writing .................................................. 3
ENG 112 Argument-Based Research ......................................... 3
HUM 115 Critical Thinking .................................................... 3
PSY 150 General Psychology .................................................. 3

Major Courses
CIS 111 Basic PC Literacy .................................................. 2
RAD 110 Radiography Introduction and Patient Care .................. 3
RAD 111 Radiographic Procedures I ......................................... 4
RAD 112 Radiographic Procedures II ....................................... 4
RAD 121 Radiographic Imaging I .......................................... 3
RAD 122 Radiographic Imaging II ......................................... 2
RAD 131 Radiographic Physics I ........................................... 2
RAD 151 Radiographic Clinical Education I ............................... 2
RAD 161 Radiographic Clinical Education II ............................. 5
RAD 171 Radiographic Clinical Education III ........................... 4
RAD 211 Radiographic Procedures III ................................... 3
RAD 231 Radiographic Physics II ......................................... 2
RAD 241 Radiation Protection ............................................... 2
RAD 245 Radiographic Quality Management ............................ 2
RAD 251 Radiographic Clinical Education IV .......................... 7
RAD 261 Radiographic Clinical Education V ............................ 7
RAD 271 Radiography Capstone ......................................... 1

Graduation Requirements .................................................. 72

Surgical Technology

The Surgical Technology curriculum prepares individuals to assist in the care of the surgical patient in the operating room and to function as a member of the surgical team.

Students will apply theoretical knowledge to the care of patients undergoing surgery and develop skills necessary to prepare supplies, equipment, and instruments; maintain aseptic conditions; prepare patients for surgery; and assist surgeons during operations. Employment opportunities include labor/delivery/ emergency departments, inpatient/outpatient surgery centers, dialysis units/facilities, physicians' offices, and central supply processing units.

SURGICAL TECHNOLOGY — D45740

General Education Courses
ENG 111 Expository Writing .................................................. 3
BIO 163 Basic Anatomy and Physiology .................................. 5

Major Courses
SUR 110 Introduction to Surgical Technology .......................... 3
SUR 111 Preoperative Patient Care ....................................... 7
SUR 122 Surgical Procedures I ............................................. 6
SUR 123 Clinical Practice I .................................................. 7
SUR 134 Surgical Procedures II .......................................... 5
SUR 135 Clinical Practice II .................................................. 4
SUR 137 Professional Success Preparation ............................ 1

Graduation Requirements .................................................. 41 Credit Hours

Therapeutic Massage

The Therapeutic Massage curriculum prepares graduates to work in direct client care settings to provide manipulation, methodical pressure, friction and kneading of the body for maintaining wellness or treating alterations in wellness throughout the lifespan.

Courses will include content in normal human anatomy and physiology, therapeutic massage, ethical/legal issues, business practices, nutrition and psychology.

Employment opportunities in North Carolina may be found in hospitals, rehabilitation centers, health departments, home health, medical offices, nursing homes, spas, health and sports clubs, and private practice. Graduates may be eligible to take the National Certification Exam for Therapeutic Massage and Bodywork, and apply for licensure in North Carolina.

THERAPEUTIC MASSAGE — D45750

General Education Courses
ENG 111 Expository Writing .................................................. 3
PSY 118 Interpersonal Psychology ......................................... 3

Major Courses
BIO 155 Nutrition ............................................................... 3
BIO 163 Basic Anatomy and Physiology .................................. 5
BUS 230 Small Business Management ................................... 3
MTH 110 Fundamentals of Massage ..................................... 10
MTH 120 Therapeutic Massage Applications .......................... 10
MTH 125 Ethics of Massage ............................................... 2

Graduation Requirements .................................................. 39 Credit Hours
### ACA 090 Study Skills

**Prerequisites:** None  
**Corequisites:** None  

This course is intended for those who placed into credit-level course work but who are not maintaining satisfactory academic progress toward meeting program goals. Topics include study skills, note taking, learning styles and strategies, test taking, goal setting, and self-assessment skills. Upon completion, students should be able to manage their learning experiences to successfully meet educational goals.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Class</th>
<th>Lab</th>
<th>Clinical</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACA 090</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

### ACA 111 College Student Success

**Prerequisites:** None  
**Corequisites:** None  

This course introduces the college’s physical, academic, and social environment and promotes the personal development essential for success. Topics include campus facilities and resources; policies, procedures, and programs; study skills; and life management issues such as health, self-esteem, motivation, goal-setting, diversity, and communication. Upon completion, students should be able to function effectively within the college environment to meet their educational objectives.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Class</th>
<th>Lab</th>
<th>Clinical</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACA 111</td>
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<td>0</td>
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</tr>
</tbody>
</table>

### ACA 115 Success and Study Skills

**Prerequisites:** None  
**Corequisites:** None  

This course provides an orientation to the campus resources and academic skills necessary to achieve educational objectives. Emphasis is placed on an exploration of facilities and services, study skills, library skills, self-assessment, wellness, goal-setting, and critical thinking. Upon completion, students should be able to manage their learning experiences to successfully meet educational goals.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Class</th>
<th>Lab</th>
<th>Clinical</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACA 115</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

### ACA 118 College Study Skills

**Prerequisites:** None  
**Corequisites:** None  

This course covers skills and strategies designed to improve study behaviors. Topics include time management, note taking, test taking, memory techniques, active reading strategies, critical thinking, communication skills, learning styles, and other strategies for effective learning. Upon completion, students should be able to apply appropriate study strategies and techniques to the development of an effective study plan.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Class</th>
<th>Lab</th>
<th>Clinical</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ACA 118</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

### ACA 120 Career Assessment

**Prerequisites:** None  
**Corequisites:** None  

This course provides the information and strategies necessary to develop clear personal, academic, and professional goals. Topics include personality styles, goal setting, various college curricula, career choices, and campus leadership development. Upon completion, students should be able to clearly state their personal, academic, and professional goals and have a feasible plan of action to achieve those goals.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Class</th>
<th>Lab</th>
<th>Clinical</th>
<th>Credit</th>
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<tr>
<td>ACA 120</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

### ACA 122 College Transfer Success

**Prerequisites:** RED 090 and ENG 090  
**Corequisites:** None  

This course provides information and strategies necessary to develop clear personal, academic, and professional goals beyond the community college experience. Topics include the CAA, college culture, career exploration, gathering information on senior institutions, strategic planning, critical thinking, and communications skills for a successful academic transition. Upon completion, students should be able to develop an academic plan to transition successfully to senior institutions. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Class</th>
<th>Lab</th>
<th>Clinical</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACA 122</td>
<td>0</td>
<td>0</td>
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<td>1</td>
</tr>
</tbody>
</table>

### ACA 220 Professional Transition

**Prerequisites:** None  
**Corequisites:** None  

This course provides preparation for meeting the demands of employment or education beyond the community college experience. Emphasis is placed on strategic planning, gathering information on workplaces or colleges, and developing human interaction skills for professional, academic, and/or community life. Upon completion, students...
students should be able to successfully make the transition to appropriate workplaces or senior institutions.

**ACC 111 Financial Accounting**  
Prerequisites: None  
Corequisites: None  
This course introduces the framework of accounting. Emphasis is placed on the accounting cycle and financial statement preparation and analysis. Upon completion, students should be able to demonstrate an understanding of the principles involved and display an analytical problem-solving ability for the topics covered. A financial software package will be used to teach the accounting cycle and produce financial statements.

**ACC 120 Principles of Financial Accounting**  
Prerequisites: RED 090 or EFL 074, and MAT 070,  
Corequisites: None  
This course introduces business decision-making accounting information systems. Emphasis is placed on analyzing, summarizing, reporting, and interpreting financial information. Upon completion, students should be able to prepare financial statements, understand the role of financial information in decision-making and address ethical considerations. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. This course is also available through the Virtual Learning Community (VLC).

**ACC 121 Principles of Managerial Accounting**  
Prerequisites: ACC 120  
Corequisites: None  
This course includes a greater emphasis on managerial and cost accounting skills. Emphasis is placed on managerial accounting concepts for external and internal analysis, reporting and decision-making. Upon completion, students should be able to analyze and interpret transactions relating to managerial concepts including product-costing systems. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. This course is also available through the Virtual Learning Community (VLC).

**ACC 122 Principles of Financial Accounting**  
Prerequisites: ACC 120  
Corequisites: None  
This course provides additional instruction in the financial accounting concepts and procedures introduced in ACC 120. Emphasis is placed on the analysis of specific balance sheet accounts, with in-depth instruction of the accounting principles applied to these accounts. Upon completion, students should be able to analyze data, prepare journal entries, and prepare reports in compliance with generally accepted accounting principles.

**ACC 125 Mathematics of Finance**  
Prerequisites: BUS 121 or MAT 115  
Corequisites: None  
This course covers computations necessary in accounting for various business transactions. Emphasis is placed on time value of money concepts and calculations needed for topics such as stocks and bonds, annuities, sinking funds, and amortization. Upon completion, students should be able to make computations necessary in accounting for transactions involving these topics.

**ACC 129 Individual Income Taxes**  
Prerequisites: ACC 120 and CIS 111  
Corequisites: None  
This course introduces the relevant laws governing individual income taxation. Topics include tax law, electronic research and methodologies, and the use of technology for preparation of individual tax returns. Upon completion, students should be able to analyze basic tax scenarios, research applicable tax law, and complete various individual tax forms.

**ACC 130 Business Income Taxes**  
Prerequisites: ACC 129  
Corequisites: None  
This course introduces the relevant laws governing business and fiduciary income taxes. Topics include tax law relating to business organizations, electronic research and methodologies, and the use of technology for the preparation of business tax returns. Upon completion, students should be able to analyze basic tax scenarios, research applicable tax law, and complete various business tax forms.

**ACC 140 Payroll Accounting**  
Prerequisites: ACC 115 or ACC 120 and CIS 111  
Corequisites: None  
This course covers federal and state laws pertaining to wages, payroll taxes, payroll tax forms, and journal and general ledger transactions. Emphasis is placed on computing wages; calculating social security, income, and unemployment taxes; preparing appropriate payroll tax forms; and journalizing/posting transactions. Upon completion, students should be able to analyze data, make appropriate computations, complete forms, and prepare accounting entries using appropriate technology.

**ACC 149 Introduction to Accounting Spreadsheets**  
Prerequisites: ACC 115 or ACC 120, and CIS 111  
Corequisites: None  
This course provides a working knowledge of computer spreadsheets and their use in accounting. Topics include pre-programmed problems, model-building problems, beginning-level macros, graphics, and what-if analysis enhancements of template problems. Upon completion, students should be able to use a computer spreadsheet to complete many of the tasks required in accounting.

**ACC 150 Accounting Software Applications**  
Prerequisites: ACC 115 or ACC 120, and CIS 111  
Corequisites: None  
This course introduces microcomputer applications related to accounting systems. Topics include general ledger, accounts receivable, accounts payable, inventory, payroll, and correcting, adjusting, and closing entries. Upon completion, students should be able to use a computer accounting package to solve accounting problems.

**ACC 175 Hotel and Restaurant Accounting**  
Prerequisites: MAT 115  
Corequisites: None  
This course covers generally accepted accounting principles and the uniform system of accounts for small hotels and motels of the American Hotel and Motel Association. Emphasis is placed on the accounting cycle, analysis of financial statements, and payroll procedures including treatment of tips. Upon completion, students...
should be able to demonstrate competence in the accounting principles and procedures used in hotels and restaurants.

**ACC 220 Intermediate Accounting I**
Prerequisites: ACC 120 and ACC 122
Corequisites: None
This course is a continuation of ACC 220. Emphasis is placed on special problems which may include leases, bonds, investments, ratio analyses, present value applications, accounting changes, and corrections. Upon completion, students should be able to demonstrate an understanding of the principles involved and display an analytical problem-solving ability for the topics covered.

**ACC 221 Intermediate Accounting II**
Prerequisites: ACC 220
Corequisites: None
This course is a continuation of ACC 220. Emphasis is placed on special problems which may include leases, bonds, investments, ratio analyses, present value applications, accounting changes, and corrections. Upon completion, students should be able to demonstrate an understanding of the principles involved and display an analytical problem-solving ability for the topics covered.

**ACC 225 Cost Accounting**
Prerequisites: ACC 121
Corequisites: None
This course introduces the nature and purposes of cost accounting as an information system for planning and control. Topics include direct materials, direct labor, factory overhead, process, job order, and standard cost systems. Upon completion, students should be able to demonstrate an understanding of the principles involved and display an analytical problem-solving ability for the topics covered.

**ACC 226 Advanced Managerial Accounting**
Prerequisites: ACC 121
Corequisites: None
This course is designed to develop an appreciation for the uses of cost information in the administration and control of business organizations. Emphasis is placed on how accounting data can be interpreted and used by management in planning and controlling business activities. Upon completion, students should be able to analyze and interpret cost information and present this information in a form that is usable by management.

**ACC 227 Practices in Accounting**
Prerequisites: ACC 220
Corequisites: None
This course provides an advanced in-depth study of selected topics in accounting using case studies and individual and group problem solving. Topics include cash flow, financial statement analysis, individual and group problem solving, practical approaches to dealing with clients, ethics, and critical thinking. Upon completion, students should be able to demonstrate competent analytical skills and effective communication of their analysis in written and/or oral presentations.

**ACC 240 Governmental and Not-for-Profit Accounting**
Prerequisites: ACC 121
Corequisites: None
This course covers principles and procedures applicable to governmental and not-for-profit organizations. Emphasis is placed on various budgetary accounting procedures and fund accounting. Upon completion, students should be able to demonstrate an understanding of the principles involved and display an analytical problem-solving ability for the topics covered.

**ACC 268 Information Systems and Internal Controls**
Prerequisites: ACC 121
Corequisites: None
This course covers the design and operation of accounting information systems, with emphasis placed upon transaction cycles and the necessary controls for reliable data. Topics include accounting procedures; authorizing, documenting, and monitoring; flowcharting, data flow diagrams, and scheduling; and some auditing concepts. Upon completion, students should be able to demonstrate an analytical problem-solving ability and to communicate effectively their analysis in written or oral presentations.

**ACC 269 Audit & Assurance Services**
Prerequisites: ACC 220
Corequisites: None
This course introduces selected topics pertaining to the objectives, theory and practices in engagements providing auditing and other assurance services. Topics will include planning, conducting and reporting, with emphasis on the related professional ethics and standards. Upon completion, students should be able to demonstrate an understanding of the types of professional services, the related professional standards, and engagement methodology.

**AHR 110 Introduction to Refrigeration**
Prerequisites: None
Corequisites: None
This course introduces the basic refrigeration process used in mechanical refrigeration and air conditioning systems. Topics include terminology, safety, and identification and function of components; refrigeration cycle; and tools and instrumentation used in mechanical refrigeration systems. Upon completion, students should be able to identify refrigeration systems and components, explain the refrigeration process, and use the tools and instrumentation of the trade.

**AHR 111 HVACR Electricity**
Prerequisites: None
Corequisites: None
This course introduces electricity as it applies to HVACR equipment. Emphasis is placed on power sources, interaction of electrical components, wiring of simple circuits, and the use of electrical test equipment. Upon completion, students should be able to demonstrate good wiring practices and the ability to read simple wiring diagrams.
AHR 112 Heating Technology 2 4 0 4
Prerequisites: None
Corequisites: None
This course covers the fundamentals of heating including oil, gas, and electric heating systems. Topics include safety, tools and instrumentation, system operating characteristics, installation techniques, efficiency testing, electrical power, and control systems. Upon completion, students should be able to explain the basic oil, gas, and electrical heating systems and describe the major components of a heating system.

AHR 113 Comfort Cooling 2 4 0 4
Prerequisites: None
Corequisites: None
This course covers the installation procedures, system operations, and maintenance of residential and light commercial comfort cooling systems. Topics include terminology, component operation, and testing and repair of equipment used to control and produce assured comfort levels. Upon completion, students should be able to use psychrometrics, manufacturer specifications, and test instruments to determine proper system operation.

AHR 114 Heat Pump Technology 2 4 0 4
Prerequisites: AHR 110 or AHR 113
Corequisites: None
This course covers the principles of air source and water source heat pumps. Emphasis is placed on safety, modes of operation, defrost systems, refrigerant charging, and system performance. Upon completion, students should be able to understand and analyze system performance and perform routine service procedures.

AHR 115 Refrigeration Systems 1 3 0 2
Prerequisites: AHR 110
Corequisites: None
This course introduces refrigeration systems and applications. Topics include defrost methods, safety and operational control, refrigerant piping, refrigerant recovery and charging, and leak testing. Upon completion, students should be able to assist in installing and testing refrigeration systems and perform simple repairs.

AHR 130 HVAC Controls 2 2 0 3
Prerequisites: AHR 111 or ELC 111
Corequisites: None
This course covers the types of controls found in residential and commercial comfort systems. Topics include electrical and electronic controls, control schematics and diagrams, test instruments, and analysis and troubleshooting of electrical systems. Upon completion, students should be able to diagnose and repair common residential and commercial comfort system controls.

AHR 133 HVAC Servicing 2 6 0 4
Prerequisites: None
Corequisites: AHR 112 or AHR 113
The course covers the maintenance and servicing of HVAC equipment. Topics include testing, adjusting, maintaining, and troubleshooting HVAC equipment and record keeping. Upon completion, students should be able to adjust, maintain, and service HVAC equipment.

AHR 151 HVAC Duct Systems I 1 3 0 2
Prerequisites: None
Corequisites: None
This course introduces the techniques used to lay out and fabricate duct work commonly found in HVAC systems. Emphasis is placed on the skills required to fabricate duct work. Upon completion, students should be able to lay out and fabricate simple duct work.

AHR 160 Refrigerant Certification 1 0 0 1
Prerequisites: None
Corequisites: None
This course covers the requirements for the EPA certification examinations. Topics include small appliances, high pressure systems, and low pressure systems. Upon completion, students should be able to demonstrate knowledge of refrigerants and be prepared for the EPA certification examinations.

AHR 180 HVAC Customer Relations 1 0 0 1
Prerequisites: None
Corequisites: None
This course introduces common business and customer relation practices that may be encountered in HVACR. Topics include business practices, appearance of self and vehicle, ways of handling customer complaints, invoices, telephone communications, and warranties. Upon completion, students should be able to present themselves to customers in a professional manner, understand how the business operates, complete invoices, and handle complaints.

AHR 210 Residential Building Code 1 2 0 2
Prerequisites: None
Corequisites: None
This course covers the residential building codes that are applicable to the design and installation of HVAC systems. Topics include current residential codes as applied to HVAC design, service, and installation. Upon completion, students should be able to demonstrate the correct usage of residential building codes that apply to specific areas of the HVAC trade.

AHR 211 Residential System Design 2 2 0 3
Prerequisites: None
Corequisites: None
This course introduces the principles and concepts of conventional residential heating and cooling system design. Topics include heating and cooling load estimating, basic psychometrics, equipment selection, duct system selection, and system design. Upon completion, students should be able to design a basic residential heating and cooling system.

AHR 212 Advanced Comfort Systems2 6 0 4
Prerequisites: AHR 114
Corequisites: None
This course covers water-cooled comfort systems, water-source/geothermal heat pumps, and high efficiency heat pump systems including variable speed drives and controls. Emphasis is placed on the application, installation, and servicing of water-source systems and the mechanical and electronic control components of advanced comfort systems. Upon completion, students should be able to test, analyze, and troubleshoot water-cooled comfort systems, water-source/geothermal heat pumps, and high efficiency heat pumps.

AHR 215 Commercial HVAC Controls 1 3 0 2
Prerequisites: AHR 111 or ELC 111
Corequisites: None
This course introduces HVAC control systems used in commercial applications. Topics include electric/electronic control systems, pneumatic control systems, DDC temperature sensors, humidity sensors, pressure sensors, wiring, controllers, actuators, and controlled devices. Upon completion, students should be able to verify or correct the performance of common control systems with regard to sequence of operation and safety.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
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<tbody>
<tr>
<td>AHR 225</td>
<td>Commercial System Design</td>
<td>2 3 0 3</td>
<td>This course covers the principles of designing heating and cooling systems for commercial buildings. Emphasis is placed on commercial heat loss/gain calculations, applied psychrometrics, air-flow calculations, air distribution system design, and equipment selection. Upon completion, students should be able to calculate heat loss/gain, design and size air and water distribution systems, and select equipment.</td>
</tr>
<tr>
<td>AHR 240</td>
<td>Hydronic Heating</td>
<td>1 3 0 2</td>
<td>This course covers the accepted procedures for proper design, installation, and balance of hydronic heating systems for residential or commercial buildings. Topics include heating equipment, pump, terminal unit, and accessory selection; piping system selection and design; and pipe sizing and troubleshooting. Upon completion, students should be able to assist with the proper design, installation, and balance of typical hydronic systems.</td>
</tr>
<tr>
<td>AHR 245</td>
<td>Chiller Systems</td>
<td>1 3 0 2</td>
<td>This course introduces the fundamentals of liquid chilling equipment. Topics include characteristics of water, principles of water chilling, the chiller, the refrigerant, water and piping circuits, freeze prevention, purging, and equipment flexibility. Upon completion, students should be able to describe the components, controls, and overall operation of liquid chilling equipment and perform basic maintenance tasks.</td>
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<tr>
<td>AHR 250</td>
<td>HVAC System Diagnostics</td>
<td>0 4 0 2</td>
<td>This course is a comprehensive study of air conditioning, heating, and refrigeration system diagnostics and corrective measures. Topics include advanced system analysis, measurement of operating efficiency, and inspection and correction of all major system components. Upon completion, students should be able to restore a residential or commercial HVAC system so that it operates at or near manufacturers' specifications. This course also includes variable air volume box set-up, test and balance air and water systems.</td>
</tr>
<tr>
<td>AHR 263</td>
<td>Energy Management</td>
<td>1 3 0 2</td>
<td>This course covers building automation computer programming as currently used in energy management. Topics include night setback, duty cycling, synchronization, schedule optimization, and anticipatory temperature control. Upon completion, students should be able to write programs utilizing the above topics and connect computer systems to HVAC systems.</td>
</tr>
<tr>
<td>AN 220</td>
<td>Cultural Anthropology</td>
<td>3 0 0 3</td>
<td>This course introduces the nature of human culture. Emphasis is placed on cultural theory, methods of fieldwork, and cross-cultural comparisons in the areas of ethnology, language, and the cultural past. Upon completion, students should be able to demonstrate an understanding of basic cultural processes and how cultural data are collected and analyzed.</td>
</tr>
<tr>
<td>AN 221</td>
<td>Comparative Cultures</td>
<td>3 0 0 3</td>
<td>This course provides an ethnographic survey of societies around the world covering their distinctive cultural characteristics and how these relate to cultural change. Emphasis is placed on the similarities and differences in social institutions such as family, economics, politics, education, and religion. Upon completion, students should be able to demonstrate knowledge of a variety of cultural adaptive strategies.</td>
</tr>
<tr>
<td>AN 230</td>
<td>Physical Anthropology</td>
<td>3 0 0 3</td>
<td>This course introduces the fundamental study of human evolution. Emphasis is placed on evolutionary theory, population genetics, biocultural adaptation and human variation, as well as non-human primate evolution, morphology, and behavior. Upon completion, students should be able to demonstrate an understanding of the biological and cultural processes which have resulted in the formation of the human species.</td>
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<tr>
<td>AN 230A</td>
<td>Physical Anthropology Lab</td>
<td>0 2 0 1</td>
<td>This course introduces the scientific study of human evolution. Emphasis is placed on evolutionary theory, population genetics, biocultural adaptation and human variation, as well as non-human primate evolution, morphology, and behavior. Upon completion, students should be able to demonstrate an understanding of the analytical skills employed by anthropologists in the study of primate evolution and variation.</td>
</tr>
<tr>
<td>AN 240</td>
<td>Archaeology</td>
<td>3 0 0 3</td>
<td>This course introduces the scientific study of the unwritten record of the human past. Emphasis is placed on the process of human cultural evolution as revealed through archaeological methods of excavation and interpretation. Upon completion, students should be able to demonstrate an understanding of how archaeologists reconstruct the past and describe the variety of past human cultures.</td>
</tr>
<tr>
<td>AN 245</td>
<td>World Prehistory</td>
<td>3 0 0 3</td>
<td>This course provides an introduction to the prehistory of the Old and New World. Emphasis is placed on archaeological evidence from origins of human culture to the beginning of recorded history. Upon completion, students should be able to demonstrate knowledge of the variability of ancient human societies and the development of agriculture and urbanism. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.</td>
</tr>
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</table>
ARC 111  Introduction to Architectural Technology  1 6 0 3
Prerequisites:  None
Corequisites:  None
This course introduces basic architectural drafting techniques, lettering, use of architectural and engineer scales, and sketching. Topics include orthographic, axonometric, and oblique drawing techniques using architectural plans, elevations, sections, and details; reprographic techniques; and other related topics. Upon completion, students should be able to prepare and print scaled drawings within minimum architectural standards.

ARC 112  Construction Materials and Methods  3 2 0 4
Prerequisites:  None
Corequisites:  None
This course introduces construction materials and their methodologies. Topics include construction terminology, materials and their properties, manufacturing processes, construction techniques, and other related topics. Upon completion, students should be able to detail construction assemblies and identify construction materials and properties.

ARC 113  Residential Architectural Technology  1 6 0 3
Prerequisites:  ARC 111, ARC 112
Corequisites:  None
This course covers intermediate residential working drawings. Topics include residential plans, elevations, sections, details, schedules, and other related topics. Upon completion, students should be able to prepare a set of residential working drawings that are within accepted architectural standards.

ARC 114  Architectural CAD  1 3 0 2
Prerequisites:  None
Corequisites:  ARC 111 or LAR 111
This course introduces basic architectural CAD techniques. Topics include basic commands and system hardware and software. Upon completion, students should be able to prepare and plot architectural drawings to scale within accepted architectural standards. This course is an introduction to CAD using AutoCAD software.

ARC 114A  Architectural CAD Lab  0 3 0 1
Prerequisites:  None
Corequisites:  ARC 114
This course provides a laboratory setting to enhance architectural CAD skills. Emphasis is placed on further development of commands and system operation. Upon completion, students should be able to prepare and plot scaled architectural drawings.

ARC 131  Building Codes  2 2 0 3
Prerequisites:  ARC 112
Corequisites:  None
This course covers the methods of researching building codes for specific projects. Topics include residential and commercial building codes. Upon completion, students should be able to determine the code constraints governing residential and commercial projects.

ARC 160  Residential Design  1 6 0 3
Prerequisites:  ARC 111
Corequisites:  ARC 112
This course introduces the methodology of basic residential design. Topics include residential site design, space organization and layout, residential styles, and the development of schematic design. Upon completion, students should be able to design a residence.

ARC 211  Light Construction Technology  1 6 0 3
Prerequisites:  ARC 111, ARC 113, ARC 114
Corequisites:  ARC 112
This course covers working drawings for light construction. Topics include plans, elevations, sections, and details; schedules; and other related topics. Upon completion, students should be able to prepare a set of working drawings which are within accepted architectural standards.

ARC 212  Commercial Construction Technology  1 6 0 3
Prerequisites:  ARC 111
Corequisites:  ARC 112
This course introduces regional construction techniques for commercial plans, elevations, sections, and details. Topics include production of a set of commercial contract documents and other related topics. Upon completion, students should be able to prepare a set of working drawings in accordance with building codes.

ARC 213  Design Project  2 6 0 4
Prerequisites:  ARC 111, ARC 112, ARC 113, ARC 114, ARC 211
Corequisites:  None
This course provides the opportunity to design and prepare a set of contract documents within an architectural setting. Topics include schematic design, design development, construction documents, and other related topics. Upon completion, students should be able to prepare a set of commercial contract documents.

ARC 220  Advanced Architectural CAD  1 3 0 2
Prerequisites:  ARC 114
Corequisites:  None
This course provides file management, productivity, and CAD customization skills. Emphasis is placed on developing advanced proficiency techniques. Upon completion, students should be able to create prototype drawings and symbol libraries, compose sheets with multiple details, and use advanced drawing and editing commands. This course is advanced CAD using AutoCAD software.

ARC 221  Architectural 3-D CAD  1 4 0 3
Prerequisites:  ARC 114
Corequisites:  None
This course introduces architectural three-dimensional CAD applications. Topics include three-dimensional drawing, coordinate systems, viewing, rendering, modeling, and output options. Upon completion, students should be able to prepare architectural three-dimensional drawings and renderings.

ARC 230  Environmental Systems  3 3 0 4
Prerequisites:  ARC 111, MAT 121
Corequisites:  None
This course introduces plumbing, mechanical (HVAC), and electrical systems for the architectural environment. Topics include basic plumbing, mechanical, and electrical systems for residential and/or commercial buildings with an introduction to selected code requirements. Upon completion, students should be able to develop schematic drawings for plumbing, mechanical, and electrical systems and perform related calculations.

ARC 240  Site Planning  2 2 0 3
Prerequisites:  ARC 111 or LAR 111
Corequisites:  None
This course introduces the principles of site planning, grading plans, and earthwork calculations. Topics include site analysis, site work, site utilities, cut and fill, soil erosion control, and other
COURSE DESCRIPTIONS

related topics. Upon completion, students should be able to prepare site development plans and details and perform cut and fill calculations.

ARC 241 Contract Administration 1 2 0 2
Prerequisites: ARC 111 and ARC 112, or LAR 111 and LAR 112
Corequisites: None
This course covers the techniques for reviewing the progress of construction projects. Topics include site observations, field reports, applications for payment, change orders, and other related topics. Upon completion, students should be able to review construction progress and produce appropriate documentation.

ARC 250 Survey of Architecture 3 0 0 3
Prerequisites: None
Corequisites: None
This course introduces the historical trends in architectural form. Topics include historical and current trends in architecture. Upon completion, students should be able to demonstrate an understanding of significant historical and current architectural styles.

ARC 261 Solar Technology 1 2 0 2
Prerequisites: ARC 111
Corequisites: None
This course introduces passive and active solar design theory and application. Topics include passive solar design, active solar theory, heat loss analysis, and other related topics. Upon completion, students should be able to design a passive solar system.

ARC 264 Digital Architecture 1 3 0 2
Prerequisites: ARC 114
Corequisites: None
This course covers multiple digital architectural techniques. Topics include spreadsheets and word processing procedures, on-line resources, modems, e-mail, image capture, multimedia, and other related topics. Upon completion, students should be able to transmit/receive electronic data, create multimedia presentations, and produce a desktop publishing document.

ARC 291 Selected Topics in Architectural Technology - - - 1
Prerequisites: Varies, based on topic
Corequisites: None
This course provides an opportunity to explore areas of current interest in Architectural Technology. Emphasis is placed on subject matter appropriate to architectural technologies. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

ARC 292 Selected Topics in Architectural Technology - - - 2
Prerequisites: Varies, based on topic
Corequisites: None
This course provides an opportunity to explore areas of current interest in Architectural Technology. Emphasis is placed on subject matter appropriate to architectural technologies. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

ARC 293 Selected Topics in Architectural Technology AutoCAD Revit 2 2 - 3
Prerequisites: ARC 114
Corequisites: None
This course provides an opportunity for students to work alongside experienced AutoCAD users from the professional community to learn AutoCAD’s newest BIM-based, 3-D design/production tool.

Emphasis is placed on using Revit in a manner similar to how the program is used in an office environment. Upon completion, students should be able to work efficiently in AutoCAD’s Revit.

ART 111 Art Appreciation 3 0 0 3
Prerequisites: ENG 090, RED 090, or placement
Corequisites: None
This course introduces the origins and historical development of art. Emphasis is placed on the relationship of design principles to various art forms including but not limited to sculpture, painting, and architecture. Upon completion, students should be able to identify and analyze a variety of artistic styles, periods, and media.

ART 113 Art Methods and Materials 2 2 0 3
Prerequisites: None
Corequisites: None
This course provides an overview of media and techniques. Emphasis is placed on exploration and manipulation of materials. Upon completion, students should be able to demonstrate familiarity with a variety of methods, materials, and processes.

ART 114 Art History Survey I 3 0 0 3
Prerequisites: ENG 090, RED 090, or placement
Corequisites: None
This course covers the development of art forms from ancient times to the Renaissance. Emphasis is placed on content, terminology, design, and style. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of human social development.

ART 115 Art History Survey II 3 0 0 3
Prerequisites: ENG 090, RED 090, or placement
Corequisites: None
This course covers the development of art forms from the Renaissance to the present. Emphasis is placed on content, terminology, design, and style. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of human social development.

ART 116 Survey of American Art 3 0 0 3
Prerequisites: RED 090, ENG 090, or placement
Corequisites: None
This course covers the development of American art forms from colonial times to the present. Emphasis is placed on architecture, painting, sculpture, graphics, and the decorative arts. Upon completion, students should be able to demonstrate an understanding of the history of the American creative experience.

ART 117 Non-Western Art History 3 0 0 3
Prerequisites: ENG 090, RED 090, or placement
Corequisites: None
This course introduces non-Western cultural perspectives. Emphasis is placed on, but not limited to, African, Oriental, and Oceanic art forms throughout history. Upon completion, students should be able to demonstrate an historical understanding of art as a product reflective of non-Western social and cultural development.

ART 121 Design I 0 6 0 3
Prerequisites: None
Corequisites: None
This course introduces the elements and principles of design as applied to two-dimensional art. Emphasis is placed on the structural elements, the principles of visual organization, and the theories of color mixing and interaction. Upon completion, students should be able to understand and use critical and analytical approaches as they apply to two-dimensional visual art.
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ART 122 Design II
Prerequisites: ART 121
Corequisites: None
This course introduces basic studio problems in three-dimensional visual design. Emphasis is placed on the structural elements and organizational principles as applied to mass and space. Upon completion, students should be able to apply three-dimensional design concepts.

ART 130 Basic Drawing
Prerequisites: None
Corequisites: None
This course introduces basic drawing techniques and is designed to increase observation skills. Emphasis is placed on the fundamentals of drawing. Upon completion, students should be able to demonstrate various methods and their application to representational imagery.

ART 131 Drawing I
Prerequisites: RED 090 and ENG 090
Corequisites: None
This course introduces the language of drawing and the use of various drawing materials. Emphasis is placed on drawing techniques, media, and graphic principles. Upon completion, students should be able to demonstrate competence in the use of graphic form and various drawing processes. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

ART 132 Drawing II
Prerequisites: ART 131
Corequisites: None
This course continues instruction in the language of drawing and the use of various materials. Emphasis is placed on experimentation in the use of drawing techniques, media, and graphic materials. Upon completion, students should be able to demonstrate increased competence in the expressive use of graphic form and techniques.

ART 140 Basic Painting
Prerequisites: None
Corequisites: None
This course introduces the mechanics of painting. Emphasis is placed on the exploration of painting media through fundamental techniques. Upon completion, students should be able to demonstrate a basic understanding and application of painting.

ART 214 Portfolio and Resume'
Prerequisites: RED 090 and ENG 090
Corequisites: None
This course covers résumé writing, interview skills, and the preparation and presentation of an art portfolio. Emphasis is placed on the preparation of a portfolio of original artwork, the preparation of a photographic portfolio, approaches to résumé writing, and interview techniques. Upon completion, students should be able to mount original art for portfolio presentation, photograph and display a professional slide portfolio, and write an effective résumé. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

ART 231 Printmaking I
Prerequisites: RED 090 and ENG 090
Corequisites: None
This course introduces printmaking: its history, development techniques, and processes. Emphasis is placed on basic applications with investigation into image source and development. Upon completion, students should be able to produce printed images utilizing a variety of methods. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

ART 240 Painting I
Prerequisites: None
Corequisites: None
This course introduces the language of painting and the use of various painting materials. Emphasis is placed on the understanding and use of various painting techniques, media, and color principles. Upon completion, students should be able to demonstrate competence in the use of creative processes directed toward the development of expressive form.

ART 244 Watercolor
Prerequisites: None
Corequisites: None
This course introduces basic methods and techniques used in watercolor. Emphasis is placed on application, materials, content, and individual expression. Upon completion, students should be able to demonstrate a variety of traditional and nontraditional concepts used in watercolor media.

ART 281 Sculpture I
Prerequisites: None
Corequisites: None
This course provides an exploration of the creative and technical methods of sculpture with focus on the traditional processes. Emphasis is placed on developing basic skills as they pertain to three-dimensional expression in various media. Upon completion, students should be able to show competence in variety of sculptural approaches.

ART 288 Studio
Prerequisites: RED 090 and ENG 090
Corequisites: None
This course provides the opportunity for advanced self-determined work beyond the limits of regular studio course sequences. Emphasis is placed on creative self-expression and in-depth exploration of techniques and materials. Upon completion, students should be able to create original projects specific to media, materials, and techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

AST 111 Descriptive Astronomy
Prerequisites: MAT 161 or MAT 171
Corequisites: AST 111A
This course introduces an overall view of modern astronomy. Topics include an overview of the solar system, the sun, stars, galaxies, and the larger universe. Upon completion, students should be able to demonstrate an understanding of the universe around them.

AST 111A Descriptive Astronomy Lab
Prerequisites: MAT 161 or MAT 171
Corequisites: AST 111
The course is a laboratory to accompany AST 111. Emphasis is placed on laboratory experiences which enhance the materials presented in AST 111 and which provide practical experience. Upon completion, students should be able to demonstrate an understanding of the universe around them.

AST 151 General Astronomy I
Prerequisites: MAT 161 or MAT 171
Corequisites: AST 151A
This course introduces the science of modern astronomy with a concentration on the solar system. Emphasis is placed on the...
<table>
<thead>
<tr>
<th>COURSE DESCRIPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AST 151A General Astronomy I</strong></td>
</tr>
<tr>
<td><strong>Lab</strong> 0 2 0 1</td>
</tr>
<tr>
<td>Prerequisites: None</td>
</tr>
<tr>
<td>Corequisites: AST 151</td>
</tr>
<tr>
<td>The course is a laboratory to accompany AST 151. Emphasis is placed on laboratory experiences which enhance the materials presented in AST 151 and which provide practical experience. Upon completion, students should be able to demonstrate a general understanding of the solar system.</td>
</tr>
<tr>
<td><strong>AST 152 General Astronomy II</strong></td>
</tr>
<tr>
<td>3 0 0 3</td>
</tr>
<tr>
<td>Prerequisites: AST 151</td>
</tr>
<tr>
<td>Corequisites: AST 152A</td>
</tr>
<tr>
<td>This course is a continuation of AST 151 with primary emphasis beyond the solar system. Topics include the sun, stars, galaxies, and the larger universe, including cosmology. Upon completion, students should be able to demonstrate a working knowledge of astronomy.</td>
</tr>
<tr>
<td><strong>AST 152A General Astronomy II Lab</strong></td>
</tr>
<tr>
<td>0 2 0 1</td>
</tr>
<tr>
<td>Prerequisites: AST 151</td>
</tr>
<tr>
<td>Corequisites: AST 152</td>
</tr>
<tr>
<td>The course is a laboratory to accompany AST 152. Emphasis is placed on laboratory experiences which enhance the materials presented in AST 152 and which provide practical experience. Upon completion, students should be able to demonstrate a working knowledge of astronomy.</td>
</tr>
<tr>
<td><strong>ATR 112 Introduction to Automation</strong></td>
</tr>
<tr>
<td>2 3 0 3</td>
</tr>
<tr>
<td>Prerequisites: None</td>
</tr>
<tr>
<td>Corequisites: None</td>
</tr>
<tr>
<td>This course introduces the basic principles of automated manufacturing and describes the tasks that technicians perform on the job. Topics include the history, development, and current applications of robots and automated systems including their configuration, operation, components, and controls. Upon completion, students should be able to understand the basic concepts of automation and robotic systems.</td>
</tr>
<tr>
<td><strong>ATR 211 Robot Programming</strong></td>
</tr>
<tr>
<td>2 3 0 3</td>
</tr>
<tr>
<td>Prerequisites: CIS 110 or CIS 111</td>
</tr>
<tr>
<td>Corequisites: None</td>
</tr>
<tr>
<td>This course provides the operational characteristics of industrial robots and programming in their respective languages. Topics include robot programming utilizing teach pendants, PLCs, and personal computers; and the interaction of external sensors, machine vision, network systems, and other related devices. Upon completion, students should be able to program and demonstrate the operation of various robots.</td>
</tr>
<tr>
<td><strong>ATR 213 Programmable Controllers</strong></td>
</tr>
<tr>
<td>3 3 0 4</td>
</tr>
<tr>
<td>Prerequisites: ELC 131</td>
</tr>
<tr>
<td>Corequisites: None</td>
</tr>
<tr>
<td>This course provides a detailed study of the PLC, related hardware and programming format, and applications in the automated work cell. Topics include input/output modules, power supplies, operator interface, ladder logic, and Boolean language programming. Upon completion, students should be able to install, program, and maintain PLC-controlled systems.</td>
</tr>
<tr>
<td><strong>ATR 214 Advanced PLCs</strong></td>
</tr>
<tr>
<td>3 3 0 4</td>
</tr>
<tr>
<td>Prerequisites: ATR 213</td>
</tr>
<tr>
<td>Corequisites: None</td>
</tr>
<tr>
<td>This course introduces the study of high-level programming languages and advanced I/O modules. Topics include STATEMENT, GRAFCET, or other advanced programming languages; system networking; computer interfacing; analog and other intelligent I/O modules; and system troubleshooting. Upon completion, students should be able to write and troubleshoot systems using high-level languages and complex I/O modules.</td>
</tr>
<tr>
<td><strong>AST 215 Sensors and Transducers</strong></td>
</tr>
<tr>
<td>2 3 0 3</td>
</tr>
<tr>
<td>Prerequisites: ELN 131</td>
</tr>
<tr>
<td>Corequisites: None</td>
</tr>
<tr>
<td>This course provides the theory and application of sensors typically found in an automated manufacturing system. Topics include physical properties, operating range, and other characteristics of numerous sensors and transducers used to detect temperature, pressure, position, and other desired physical parameters. Upon completion, students should be able to properly interface a sensor to a PLC, PC, or process control system.</td>
</tr>
<tr>
<td><strong>ATR 218 Computer Integrated Manufacturing</strong></td>
</tr>
<tr>
<td>2 3 0 3</td>
</tr>
<tr>
<td>Prerequisites: ATR 211</td>
</tr>
<tr>
<td>Corequisites: None</td>
</tr>
<tr>
<td>This course introduces high technology systems which are currently being used in new automated manufacturing facilities. Topics include integration of robots and work cell components, switches, proxies, vision and photoelectric sensors, with automated control and data gathering systems. Upon completion, students should be able to install, program, and troubleshoot an automated manufacturing cell and its associated data communications systems.</td>
</tr>
<tr>
<td><strong>ATR 219 Automated Systems Troubleshooting</strong></td>
</tr>
<tr>
<td>1 3 0 2</td>
</tr>
<tr>
<td>Prerequisites: ATR 213</td>
</tr>
<tr>
<td>Corequisites: None</td>
</tr>
<tr>
<td>This course introduces troubleshooting procedures used in automated systems. Topics include logical fault isolation, diagnostic software usage, component replacement techniques, and calibration; safety of equipment; and protection of equipment while troubleshooting. Upon completion, students should be able to analyze and troubleshoot an automated system.</td>
</tr>
<tr>
<td><strong>AUT 114 Safety and Emissions</strong></td>
</tr>
<tr>
<td>1 2 0 2</td>
</tr>
<tr>
<td>Prerequisites: AUT 141, AUT 141A, AUT 151, AUT 151A</td>
</tr>
<tr>
<td>Corequisites: None</td>
</tr>
<tr>
<td>This course covers the laws, procedures, and specifications needed to perform a North Carolina State Safety and Emissions inspection. Topics include brake, steering and suspension, lighting, horn, windshield wiper, tire, mirrors, and emission control devices inspection. Upon completion, students should be able to perform complete and thorough North Carolina State Safety and Emissions inspections.</td>
</tr>
<tr>
<td><strong>AUT 116 Engine Repair</strong></td>
</tr>
<tr>
<td>2 3 0 3</td>
</tr>
<tr>
<td>Prerequisites: None</td>
</tr>
<tr>
<td>Corequisites: AUT 116A, AUT 123</td>
</tr>
<tr>
<td>This course covers the theory, construction, inspection, diagnosis, and repair of internal combustion engines and related systems. Topics include fundamental operating principles of engines and diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis, measurement and repair of automotive engines using appropriate tools, equipment, procedures, and service information.</td>
</tr>
</tbody>
</table>
### COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUT 116A</td>
<td>Engine Repair Lab</td>
<td>0 3 0 1</td>
<td>None</td>
<td>AUT 116</td>
</tr>
<tr>
<td>AUT 123</td>
<td>Powertrain Diagn &amp; Serv</td>
<td>1 3 0 2</td>
<td>None</td>
<td>AUT 116, AUT 116A</td>
</tr>
<tr>
<td>AUT 141</td>
<td>Suspension &amp; Steering Sys</td>
<td>2 3 0 3</td>
<td>AUT 161a, AUT 141A, AUT 151A</td>
<td>AUT 141</td>
</tr>
<tr>
<td>AUT 141A</td>
<td>Suspension &amp; Steering Lab</td>
<td>0 3 0 1</td>
<td>None</td>
<td>AUT 141</td>
</tr>
<tr>
<td>AUT 151</td>
<td>Brake Systems</td>
<td>2 3 0 3</td>
<td>AUT 161a</td>
<td>AUT 141</td>
</tr>
<tr>
<td>AUT 151A</td>
<td>Brakes Systems Lab</td>
<td>0 3 0 1</td>
<td>None</td>
<td>AUT 151</td>
</tr>
<tr>
<td>AUT 161</td>
<td>Electrical Systems</td>
<td>4 3 0 5</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>AUT 161a</td>
<td>Basic Auto Electricity Part 1</td>
<td>3 0 0 3</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>AUT 161b</td>
<td>Basic Auto Electricity Part 2</td>
<td>1 3 0 2</td>
<td>AUT 161a</td>
<td>None</td>
</tr>
<tr>
<td>AUT 163</td>
<td>Adv Auto Electricity</td>
<td>2 3 0 3</td>
<td>AUT 161</td>
<td>AUT 163A, AUT 181</td>
</tr>
<tr>
<td>AUT 163A</td>
<td>Adv Auto Electricity Lab</td>
<td>0 3 0 1</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>AUT 164</td>
<td>Auto Climate Control</td>
<td>2 4 0 4</td>
<td>AUT 161 OR (AUT 161A AND AUT 161B)</td>
<td>None</td>
</tr>
</tbody>
</table>

This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include diagnosis, inspection, adjustment, and repair of automotive engines using appropriate service information. Upon completion, students should be able to perform basic diagnosis, measurement and repair of automotive engines using appropriate tools, equipment, procedures, and service information.

This course covers the diagnosis, repair and service of the vehicle powertrain and related systems. Topics include fundamental operating principles of engines and transmissions and use of proper service procedures for diagnosis, service and removal and replacement of major components. Upon completion, students should be able to perform basic service and diagnosis of the powertrain and related systems, and to perform in vehicle repairs and remove and replace components.

This course covers the diagnosis, repair and service of the vehicle powertrain and related systems. Topics include fundamental operating principles of engines and transmissions and use of proper service procedures for diagnosis, service and removal and replacement of major components. Upon completion, students should be able to perform basic service and diagnosis of the powertrain and related systems, and to perform in vehicle repairs and remove and replace components.

This course covers the theory of refrigeration and heating, electrical/electronic/pneumatic controls, and diagnosis/repair of climate control systems. Topics include diagnosis and repair of climate control components and systems, recovery/recycling of refrigerants, and safety and environmental regulations. Upon completion, students should be able to describe the operation, diagnose, and safely service climate control systems using
AUT 181  Engine Performance 1  2 3 0 3  
Prerequisites: AUT 161a  
Corequisites: AUT 161b, AUT 163, AUT 163A  
This course covers the introduction, theory of operation, and basic diagnostic procedures required to restore engine performance to vehicles equipped with complex engine control systems. Topics include an overview of engine operation, ignition components and systems, fuel delivery, injection components and systems and emission control devices. Upon completion, students should be able to describe operation and diagnose/repair basic ignition, fuel and emission related driveability problems using appropriate test equipment/service information.

AUT 183  Engine Performance 2  2 6 0 4  
Prerequisites: AUT 181, AUT 141, AUT 141A, AUT 151, AUT 151A, AUT 281  
Corequisites: AUT 221, AUT 221A  
This course covers study of the electronic engine control systems, the diagnostic process used to locate engine performance concerns, and procedures used to restore normal operation. Topics will include currently used fuels and fuel systems, exhaust gas analysis, emission control components and systems, OBD II (on-board diagnostics) and inter-related electrical/electronic systems. Upon completion, students should be able to diagnose and repair complex engine performance concerns using appropriate test equipment and service information.

AUT 213  Automotive Servicing 2  1 3 0 2  
Prerequisites: AUT 116, AUT 116A, AUT 123, AUT 161a  
Corequisites: AUT 181  
This course is a lab used as an alternative to co-op placement. Emphasis is placed on shop operations, troubleshooting, testing, adjusting, repairing, and replacing components using appropriate test equipment and service information. Upon completion, students should be able to perform a variety of automotive repairs using proper service procedures and to operate appropriate equipment.

AUT 221  Auto Transm/Transaxles  2 3 0 3  
Prerequisites: AUT 141, AUT 141A, AUT 151, AUT 151A  
Corequisites: AUT 183, AUT 221A  
This course covers operation, diagnosis, service, and repair of automatic transmissions/transaxles. Topics include hydraulic, pneumatic, mechanical, and electrical/electronic operation of automatic drive trains and the use of appropriate service tools and equipment. Upon completion, students should be able to explain operational theory, diagnose and repair automatic drive trains.

AUT 221A  Auto Transm/Transaxl Lab 0 3 0 1  
Prerequisites: None  
Corequisites: AUT 221  
This course is an optional lab to be used as an alternative to co-op placement in meeting the NATEF standards for total hours. Topics include hydraulic, pneumatic, mechanical, and electrical/electronic operation of automatic drive trains and the use of appropriate service tools and equipment. Upon completion, students should be able to diagnose and repair automatic drive trains.

AUT 231  Man Trans/Axles/Dtrains  2 3 0 3  
Prerequisites: None  
Corequisites: AUT 231A  
This course covers the operation, diagnosis, and repair of manual transmissions/transaxles, clutches, driv shafts, axles, and final drives. Topics include theory of torque, power flow, and manual drive train service and repair using appropriate service information, tools, and equipment. Upon completion, students should be able to explain operational theory, diagnose and repair manual drive trains.

AUT 231A  Man Trans/Ax/Drtrains Lab 0 3 0 1  
Prerequisites: None  
Corequisites: AUT 231  
This course is an optional lab for the program that needs to meet the NATEF hour standards but does not have a co-op component in the program. Topics include manual drive train diagnosis, service and repair using appropriate service information, tools, and equipment. Upon completion, student should be able to diagnose and repair manual drive trains.

AUT 281  Adv Engine Performance  2 2 0 3  
Prerequisites: AUT 161a, AUT 161b, AUT 163, AUT 163A, AUT 181  
Corequisites: None  
This course utilizes service information and specialized test equipment to diagnose and repair power train control systems. Topics include computerized ignition, fuel and emission systems, related diagnostic tools and equipment, data communication networks, and service information. Upon completion, students should be able to perform diagnosis and repair.

B  

Course Title Hours Per Week Class Lab Clinical Credit  
BAF 235 Analyzing Financial Statements  3 0 0 3  
Prerequisites: ACC 120  
Corequisites: None  
This course provides practice in constructing and analyzing long-range, multiple-year forecasts of income statements and balance sheets, and cash budgets. Topics include trend, ratio, common size, comparative analysis, programs, projections, and cash budgets. Upon completion, students should be able to analyze income statements, balance sheets, and pro forma statements.

BIO 094 Concepts of Human Biology  3 2 0 4  
Prerequisites: None  
Corequisites: RED 090  
This course focuses on fundamental concepts of human biology. Topics include terminology, biochemistry, cell biology, tissues, body systems, and other related topics. Upon completion, students should be able to demonstrate preparedness for college-level anatomy and physiology courses.

BIO 106 Introduction to Anatomy/ Physiology/Microbiology  2 2 0 3  
Prerequisites: None  
Corequisites: None  
This course covers the fundamental and principle concepts of human anatomy and physiology and microbiology. Topics include an introduction to the structure and function of cells, tissues, and human organ systems, and an overview of microbiology, epidemiology, and control of microorganisms. Upon completion, students should be able to identify structures and functions of the human body and describe microorganisms and their significance in health and disease.
### COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 110</td>
<td>Principles of Biology</td>
<td>3 3 0 4</td>
<td>This course provides a survey of fundamental biological principles for non-science majors. Emphasis is placed on basic chemistry, cell biology, metabolism, genetics, taxonomy, evolution, ecology, diversity, and other related topics. Upon completion, students should be able to demonstrate increased knowledge and better understanding of biology as it applies to everyday life. Laboratory exercises are designed to illustrate the basic principles presented in lecture.</td>
</tr>
<tr>
<td>BIO 111</td>
<td>General Biology I</td>
<td>3 3 0 4</td>
<td>This course introduces the principles and concepts of biology. Emphasis is placed on basic biological chemistry, cell structure and function, metabolism and energy transformation, genetics, evolution, classification, and other related topics. Upon completion, students should be able to demonstrate understanding of life at the molecular and cellular levels. This course is the first in a two-semester series intended for science majors.</td>
</tr>
<tr>
<td>BIO 120</td>
<td>Introductory Botany</td>
<td>3 3 0 4</td>
<td>This course provides an introduction to the classification, relationships, structure, and function of plants. Topics include reproduction and development of seed and non-seed plants, levels of organization, form and function of systems, and a survey of major taxa. Upon completion, students should be able to demonstrate comprehension of plant form and function, including selected taxa of both seed and non-seed plants. Laboratory exercises are correlated with lecture topics.</td>
</tr>
<tr>
<td>BIO 130</td>
<td>Introductory Zoology</td>
<td>3 3 0 4</td>
<td>This course provides an introduction to the classification, relationships, structure, and function of major animal phyla. Emphasis is placed on levels of organization, reproduction and development, comparative systems, and a survey of selected phyla. Upon completion, students should be able to demonstrate comprehension of animal form and function including comparative systems of selected groups. The evolutionary relatedness of the organisms studied will be emphasized.</td>
</tr>
<tr>
<td>BIO 140</td>
<td>Environmental Biology</td>
<td>3 0 0 3</td>
<td>This course introduces environmental processes and the influence of human activities upon them. Topics include ecological concepts, population growth, natural resources, and a focus on current environmental problems from scientific, social, political, and economic perspectives. Upon completion, students should be able to demonstrate an understanding of environmental inter-relationships and of contemporary environmental issues.</td>
</tr>
<tr>
<td>BIO 140A</td>
<td>Environmental Biology Lab</td>
<td>0 3 0 1</td>
<td>This course provides a laboratory component to complement BIO 140. Emphasis is placed on laboratory and field experience. Upon completion, students should be able to demonstrate a practical understanding of environmental interrelationships and of contemporary environmental issues. Environmentally responsible behavior at the individual level is investigated.</td>
</tr>
<tr>
<td>BIO 150</td>
<td>Genetics in Human Affairs</td>
<td>3 0 0 3</td>
<td>This course describes the importance of genetics in everyday life. Topics include the role of genetics in human development, birth defects, cancer and chemical exposure, and current issues including genetic engineering and fertilization methods. Upon completion, students should be able to understand the relationship of genetics to society today and its possible influence on our future. Through the analysis of current topics in genetics, students will develop skills in reading scientific articles and in compiling information into written and oral communications.</td>
</tr>
<tr>
<td>BIO 160</td>
<td>Introductory Life Sciences</td>
<td>2 2 0 3</td>
<td>This course covers the biochemistry of foods and nutrients with consideration of the physiological effects of specialized diets for specific biological needs. Topics include cultural, religious, and economic factors that influence a person’s acceptance of food as well as nutrient requirements of the various life stages. Upon completion, students should be able to identify the functions and sources of nutrients, the mechanisms of digestion, and the nutritional requirements of all age groups.</td>
</tr>
</tbody>
</table>

*Prerequisites: ENG 090, and MAT 070, and RED 090
Corequisites: None

*Prerequisites: BIO 110 or BIO 111
Corequisites: None

*Prerequisites: BIO 110 or BIO 111
Corequisites: None

*Prerequisites: None
Corequisites: None

*Prerequisites: None
Corequisites: BIO 140

*Prerequisites: BIO 110 or BIO 111
Corequisites: None

*Prerequisites: None
Corequisites: None

*Prerequisites: BIO 110 or BIO 111
Corequisites: None

*Prerequisites: BIO 110 or BIO 111
Corequisites: None

*Prerequisites: None
Corequisites: None

*Prerequisites: ENG 090, MAT 070, RED 090, or placement
Corequisites: None

*Prerequisites: BIO 111
Corequisites: None

*Prerequisites: BIO 110 or BIO 111
Corequisites: None

*Prerequisites: BIO 140
Corequisites: None

*Prerequisites: BIO 110 or BIO 111
Corequisites: None

*Prerequisites: CHM 090 or equivalent
Corequisites: None

*Prerequisites: None
Corequisites: None

*Prerequisites: BIO 140A
Corequisites: None

*Prerequisites: None
Corequisites: None
the medical terminology used to describe normal and pathological states. Upon completion, students should be able to demonstrate an understanding of normal anatomy and physiology and the appropriate use of medical terminology.

**BIO 163 Basic Anatomy and Physiology**  
Prerequisites: CHM 090 or equivalent  
Corequisites: None  
This course provides a basic study of the structure and function of the human body. Topics include a basic study of the body systems as well as an introduction to homeostasis, cells, tissues, nutrition, acid-base balance, and electrolytes. Upon completion, students should be able to demonstrate a basic understanding of the fundamental principles of anatomy and physiology and their interrelationships.

**BIO 165 Anatomy and Physiology I**  
Prerequisites: CHM 090  
Corequisites: None  
This course is the first of a two-course sequence which provides a comprehensive study of the anatomy and physiology of the human body. Topics include the structure, function, and interrelationships of organ systems with emphasis on the processes which maintain homeostasis. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships.

**BIO 166 Anatomy and Physiology II**  
Prerequisites: BIO 165  
Corequisites: None  
This course is the second in a two-course sequence which provides a comprehensive study of the anatomy and physiology of the human body. Topics include the structure, function, and interrelationships of organ systems with emphasis on the processes which maintain homeostasis. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships of all body systems.

**BIO 168 Anatomy and Physiology I**  
Prerequisites: BIO 110 or BIO 111  
Corequisites: None  
This course provides a comprehensive study of the anatomy and physiology of the human body. Topics include body organization, homeostasis, cytology, histology, and the integumentary, skeletal, muscular, nervous systems, and special senses. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships. Laboratory exercises will include investigation of structural and functional aspects of the indicated organ systems.

**BIO 169 Anatomy and Physiology II**  
Prerequisites: BIO 168  
Corequisites: None  
This course provides a continuation of the comprehensive study of the anatomy and physiology of the human body. Topics include the endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems as well as metabolism, nutrition, acid-base balance, and fluid and electrolyte balance. Upon completion, students should be able to demonstrate an in-depth understanding of principles of anatomy and physiology and their interrelationships. Laboratory exercises will include investigation of structural and functional aspects of the indicated organ systems.

**BIO 175 General Microbiology**  
Prerequisites: BIO 163 or BIO 166  
Corequisites: None  
This course covers principles of microbiology with emphasis on microorganisms and human disease. Topics include an overview of microbiology and aspects of medical microbiology, identification and control of pathogens, disease transmission, host resistance, and immunity. Upon completion, students should be able to demonstrate knowledge of microorganisms and the disease process as well as aseptic and sterile techniques.

**BIO 180 Biological Chemistry**  
Prerequisites: BIO 110 or BIO 111  
Corequisites: None  
This course provides an introduction to basic biochemical processes in living systems. Topics include properties of carbohydrates, lipids, proteins, nucleic acids, vitamins, and buffers, with emphasis on biosynthesis, degradation, function, and equilibrium. Upon completion, students should be able to demonstrate an understanding of fundamental biochemical concepts. Laboratory exercises will complement the basic principles presented in lecture.

**BIO 230 Entomology**  
Prerequisites: BIO 112  
Corequisites: None  
This course covers the biology of insects. Topics include harmful and beneficial insects, their identification, classification, life cycles, behavior, distribution, economic importance, and the methods involved in collection and preservation. Upon completion, students should be able to identify common insects and describe their biology and ecology.

**BIO 231 Invertebrate Zoology**  
Prerequisites: BIO 112  
Corequisites: None  
This course introduces the principles of invertebrate animal biology. Emphasis is placed on the diversity, comparative anatomy, reproduction, development, behavior, ecology, evolution, and the importance of the major invertebrate phyla. Upon completion, students should be able to demonstrate knowledge of life at the invertebrate level. Modern evolutionary theory is used to interpret the relationships among the organisms studied in this course.

**BIO 232 Vertebrate Zoology**  
Prerequisites: BIO 112  
Corequisites: None  
This course introduces the principles of animal biology of the chordate phylum. Emphasis is placed on the diversity, morphology, reproduction, development, behavior, ecology, evolution, and importance of the chordates. Upon completion, students should be able to demonstrate increased knowledge and comprehension of zoology as it applies to life. Local species are emphasized in the laboratory component of this course.

**BIO 242 Natural Resources Conservation**  
Prerequisites: BIO 112  
Corequisites: None  
This course describes the importance of natural resources and their role in our environment. Emphasis is placed on the physical, biological, and ecological principles underlying natural resource conservation with attention to the biological consequences of human impacts. Upon completion, students should be able to demonstrate an understanding of natural resource conservation. Local environmental issues dealing with resource conservation are emphasized.
### COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 243</td>
<td>Marine Biology</td>
<td>3 3 0 4</td>
<td>This course covers the physical and biological components of the marine environment. Topics include major habitats, the diversity of organisms, their biology and ecology, marine productivity, and the use of marine resources by humans. Upon completion, students should be able to identify various marine habitats and organisms and to demonstrate a knowledge of their biology and ecology.</td>
</tr>
<tr>
<td>BIO 250</td>
<td>Genetics</td>
<td>3 3 0 4</td>
<td>This course covers principles of prokaryotic and eukaryotic cell genetics. Emphasis is placed on the molecular basis of heredity, chromosome structure, patterns of Mendelian and non-Mendelian inheritance, evolution, and biotechnological applications. Upon completion, students should be able to recognize and describe genetic phenomena and demonstrate knowledge of important genetic principles.</td>
</tr>
<tr>
<td>BIO 271</td>
<td>Pathophysiology</td>
<td>3 0 0 3</td>
<td>This course provides an in-depth study of human pathological processes and their effects on homeostasis. Emphasis is placed on interrelationships among organ systems in deviations from homeostasis. Upon completion, students should be able to demonstrate a detailed knowledge of pathophysiology.</td>
</tr>
<tr>
<td>BIO 275</td>
<td>Microbiology</td>
<td>3 3 0 4</td>
<td>This course covers principles of microbiology and the impact these organisms have on man and the environment. Topics include the various groups of microorganisms, their structure, physiology, genetics, microbial pathogenicity, infectious diseases, immunology, and selected practical applications. Upon completion, students should be able to demonstrate knowledge and skills including microscopy, aseptic technique, staining, culture methods, and identification of microorganisms. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement.</td>
</tr>
<tr>
<td>BPA 250</td>
<td>Dessert and Bread Production</td>
<td>1 8 0 5</td>
<td>This course is designed to merge artistry and innovation with the practical baking and pastry techniques utilized in a production setting. Topics include quantity bread and roll-in dough production, plated and platter presentations, and seasonal/theme product utilization with an emphasis on cost effectiveness. Upon completion, students should be able to plan and prepare breads and desserts within a restaurant environment and determine production costs and selling prices.</td>
</tr>
<tr>
<td>BPR 111</td>
<td>Blueprint Reading</td>
<td>1 2 0 2</td>
<td>This course introduces the basic principles of blueprint reading. Topics include line types, orthographic projections, dimensioning methods, and notes. Upon completion, students should be able to interpret basic blueprints and visualize the features of a part.</td>
</tr>
<tr>
<td>BPR 121</td>
<td>Blueprint Reading: Mechanical</td>
<td>1 2 0 2</td>
<td>This course covers the interpretation of intermediate blueprints. Topics include tolerancing, auxiliary views, sectional views, and assembly drawings. Upon completion, students should be able to read and interpret a mechanical working drawing.</td>
</tr>
<tr>
<td>BPR 130</td>
<td>Blueprint Reading/Construction</td>
<td>1 2 0 2</td>
<td>This course covers the interpretation of blueprints and specifications that are associated with the construction trades. Emphasis is placed on interpretation of details for foundations, floor plans, elevations, and schedules. Upon completion, students should be able to read and interpret a set of construction blueprints.</td>
</tr>
<tr>
<td>BPR 230</td>
<td>Commercial Blueprints</td>
<td>1 2 0 2</td>
<td>This course covers blueprints specific to commercial structures and requires basic blueprint reading skills and/or a commercial construction background. Topics include site, structural, mechanical, electrical, and plumbing blueprints and specifications. Upon completion, students should be able to interpret commercial blueprints and specifications.</td>
</tr>
<tr>
<td>BUS 110</td>
<td>Introduction to Business</td>
<td>3 0 0 3</td>
<td>This course provides a survey of the business world. Topics include the basic principles and practices of contemporary business. Upon completion, students should be able to demonstrate an understanding of business concepts as a foundation for studying other business subjects. This course has been approved to satisfy the Comprehensive Articulation Agreement pre-major and/or elective course requirement. This course is also available through the Virtual Learning Community (VLC).</td>
</tr>
<tr>
<td>BUS 115</td>
<td>Business Law I</td>
<td>3 0 0 3</td>
<td>This course introduces the ethics and legal framework of business. Emphasis is placed on contracts, negotiable instruments, Uniform Commercial Code, and the working of the court systems. Upon completion, students should be able to apply ethical issues and laws covered to selected business decision-making situations.</td>
</tr>
<tr>
<td>BUS 116</td>
<td>Business Law II</td>
<td>3 0 0 3</td>
<td>This course continues the study of ethics and business law. Emphasis is placed on bailments, sales, risk-bearing, forms of business ownership, and copyrights. Upon completion, students should be able to apply ethical issues and laws covered to selected business decision-making situations.</td>
</tr>
</tbody>
</table>
| BUS 121     | Business Math                                     | 2 2 0 3 | This course covers fundamental mathematical operations and their application to business problems. Topics include payroll, pricing, interest and discount, commission, taxes, and other pertinent uses of mathematics in the field of business. Upon completion, students should be able to apply mathematical
This course introduces the functions of personnel/human resource management within an organization. Topics include equal opportunity and the legal environment, recruitment and selection, performance appraisal, employee development, compensation planning, and employee relations. Upon completion, students should be able to anticipate and resolve human resource concerns.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS 125</td>
<td>Personal Finance</td>
<td>3 0 0 3</td>
<td></td>
</tr>
<tr>
<td>BUS 137</td>
<td>Principles of Management</td>
<td>3 0 0 3</td>
<td></td>
</tr>
<tr>
<td>BUS 139</td>
<td>Entrepreneurship</td>
<td>3 0 0 3</td>
<td></td>
</tr>
<tr>
<td>BUS 147</td>
<td>Business Insurance</td>
<td>3 0 0 3</td>
<td></td>
</tr>
<tr>
<td>BUS 151</td>
<td>People Skills</td>
<td>3 0 0 3</td>
<td></td>
</tr>
<tr>
<td>BUS 153</td>
<td>Human Resource Management</td>
<td>3 0 0 3</td>
<td></td>
</tr>
<tr>
<td>BUS 193</td>
<td>Selected Topics in Business Administration</td>
<td>3 0 0 3</td>
<td></td>
</tr>
<tr>
<td>BUS 217</td>
<td>Employment Law and Regulations</td>
<td>3 0 0 3</td>
<td></td>
</tr>
<tr>
<td>BUS 225</td>
<td>Business Finance</td>
<td>2 2 0 3</td>
<td></td>
</tr>
<tr>
<td>BUS 228</td>
<td>Business Statistics</td>
<td>2 2 0 3</td>
<td></td>
</tr>
<tr>
<td>BUS 230</td>
<td>Small Business Management</td>
<td>3 0 0 3</td>
<td></td>
</tr>
<tr>
<td>BUS 234</td>
<td>Training and Development</td>
<td>3 0 0 3</td>
<td></td>
</tr>
</tbody>
</table>

This course is also available through the Virtual Learning Community (VLC).
BUS 239 Business Applications Seminar 1 2 0 2
Prerequisites: ACC 120, ACC 121, BUS 115, BUS 116, BUS 137, ECO 151, ENG 114, MAT 115, MKT 120, MKT 221
Corequisites: None
This course is designed as a capstone course for Business Administration majors. Emphasis is placed on decision making in the areas of management, marketing, production, purchasing, and finance. Upon completion, students should be able to apply the techniques, processes, and vital professional skills needed in the work place.

BUS 245 Entrepreneurship II 3 0 0 3
Prerequisites: BUS 139 and BUS 137
Corequisites: None
This course is designed to allow the student to develop a business plan. Topics include the need for a business plan, sections of the plan, writing the plan, and how to find assistance in preparing the plan. Upon completion, students should be able to design and implement a business plan based on sound entrepreneurship principles.

BUS 254 Advanced People Skills 3 0 0 3
Prerequisites: BUS 151
Corequisites: None
This course provides an advanced study of the concepts included in BUS 151. Topics include causes for communication breakdown, behavior styles, and advanced techniques for assertiveness and conflict resolution in the business environment. Upon completion, students should be able to recognize and handle conflict situations and the difficult people who create them.

BUS 256 Recruitment, Selection, and Personnel Planning 3 0 0 3
Prerequisites: None
This course introduces the basic principles involved in managing the employment process. Topics include personnel planning, recruiting, interviewing and screening techniques, maintaining employee records; and voluntary and involuntary separations. Upon completion, students should be able to acquire and retain employees who match position requirements and fulfill organizational objectives.

BUS 258 Compensation and Benefits 3 0 0 3
Prerequisites: BUS 153
Corequisites: None
This course is designed to study the basic concepts of pay and its role in rewarding performance. Topics include wage and salary surveys, job analysis, job evaluation techniques, benefits, and pay-for-performance programs. Upon completion, students should be able to develop and manage a basic compensation system to attract, motivate, and retain employees.

BUS 259 HRM Applications 3 0 0 3
Prerequisites: BUS 217, BUS 234, BUS 256, BUS 258
Corequisites: None
This course provides students in the Human Resource Management concentration the opportunity to reinforce their learning experiences from preceding HRM courses. Emphasis is placed on application of day-to-day HRM functions by completing in-basket exercises and through simulations. Upon completion, students should be able to determine the appropriate actions called for by typical events that affect the status of people at work.

BUS 260 Business Communication 3 0 0 3
Prerequisites: ENG 111, OST 136, OST 164
Corequisites: None
This course is designed to develop skills in writing business communications. Emphasis is placed on business reports, correspondence, and professional presentations. Upon completion, students should be able to communicate effectively in the work place.

BUS 285 Business Management Issues 2 2 0 3
Prerequisites: BUS 137
Corequisites: None
This course covers contemporary issues that affect successful businesses and their managers and employees. Emphasis is placed on using case studies and exercises to develop analytical and problem-solving skills, ethics, quality management concepts, team skills, and effective communication. Upon completion, students should be able to apply the specific knowledge and skills covered to become more effective managers and employees.
COURSE DESCRIPTIONS

CHM 092 Fundamentals of Chemistry 3 2 0 4
Prerequisites: ENG 090, MAT 070, RED 090
Corequisites: None
This course covers fundamentals of chemistry with laboratory applications. Topics include measurements, matter, energy, atomic theory, bonding, molecular structure, nomenclature, balancing equations, stoichiometry, solutions, acids and bases, gases, and basic organic chemistry. Upon completion, students should be able to understand and apply basic chemical concepts and demonstrate basic laboratory skills necessary for success in college-level science courses.

CHM 130 General, Organic, and Biochemistry 3 0 0 3
Prerequisites: ENG 090, MAT 070, RED 090
Corequisites: None
This course provides a survey of basic facts and principles of general, organic, and biochemistry. Topics include measurement, molecular structure, nuclear chemistry, solutions, acid-base chemistry, gas laws, and the structure, properties, and reactions of major organic and biological groups. Upon completion, students should be able to demonstrate an understanding of fundamental chemical concepts.

CHM 131 Introduction to Chemistry 3 0 0 3
Prerequisites: ENG 090, RED 090
Corequisites: CHM 131A
This course introduces the fundamental concepts of inorganic chemistry. Topics include measurement, matter and energy, atomic and molecular structure, nuclear chemistry, stoichiometry, chemical formulas and reactions, chemical bonding, gas laws, solutions, and acids and bases. Upon completion, students should be able to demonstrate a basic understanding of chemistry as it applies to other fields.

CHM 131A Introduction to Chemistry Lab 0 3 0 1
Prerequisites: ENG 090, RED 090
Corequisites: CHM 131
This course is a laboratory to accompany CHM 131. Emphasis is placed on laboratory experiences that enhance materials presented in CHM 131. Upon completion, students should be able to utilize basic laboratory procedures and apply them to chemical principles presented in CHM 131.

CHM 132 Organic and Biochemistry 3 3 0 4
Prerequisites: CHM 131
Corequisites: None
This course provides a survey of major functional classes of compounds in organic and biochemistry. Topics include structure, properties, and reactions of the major organic and biological molecules and basic principles of metabolism. Upon completion, students should be able to demonstrate an understanding of fundamental chemical concepts needed to pursue studies in related professional fields.

CHM 151 General Chemistry I 3 3 0 4
Prerequisites: ENG 090, RED 090; and MAT 161 or MAT 171
Corequisites: None
This course covers fundamental principles and laws of chemistry. Topics include measurement, atomic and molecular structure, periodicity, chemical reactions, chemical bonding, stoichiometry, thermochemistry, gas laws, and solutions. Upon completion, students should be able to demonstrate an understanding of fundamental chemical laws and concepts as needed in CHM 152.

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Students will develop laboratory techniques and learn how to effectively communicate experimental results in written reports.

CHM 152 General Chemistry II 3 3 0 4
Prerequisites: CHM 151
Corequisites: None
This course provides a continuation of the study of the fundamental principles and laws of chemistry. Topics include kinetics, equilibrium, ionic and redox reactions, acid-base theory, electrochemistry, thermodynamics, introduction to nuclear and organic chemistry, and complex ions. Upon completion, students should be able to demonstrate an understanding of chemical concepts as needed to pursue further study in chemistry and related professional fields. Students will develop laboratory skills learned in CHM 151 and give and oral presentation on a chemically relevant subject.

CHM 251 Organic Chemistry I 3 3 0 4
Prerequisites: CHM 152
Corequisites: None
This course provides a systematic study of the theories, principles, and techniques of organic chemistry. Topics include nomenclature, structure, properties, reactions, and mechanisms of hydrocarbons, alkyl halides, alcohols, and ethers; further topics include isomerization, stereochemistry, and spectroscopy. Upon completion, students should be able to demonstrate an understanding of the fundamental concepts of covered organic topics as needed in CHM 252. Students will perform basic synthetic and analytic techniques on organic compounds.

CHM 252 Organic Chemistry II 3 3 0 4
Prerequisites: CHM 251
Corequisites: None
This course provides continuation of the systematic study of the theories, principles, and techniques of organic chemistry. Topics include nomenclature, structure, properties, reactions, and mechanisms of aromatics, aldehydes, ketones, carboxylic acids and derivatives, amines and heterocyclics; multi-step synthesis will be emphasized. Upon completion, students should be able to demonstrate an understanding of organic concepts as needed to pursue further study in chemistry and related professional fields. Students will conduct a multi-step synthetic scheme in the laboratory component.

CHM 261 Quantitative Analysis 2 6 0 4
Prerequisites: CHM 152
Corequisites: None
This course introduces classical methods of chemical analysis with an emphasis on laboratory techniques. Topics include statistical data treatment; stoichiometric and equilibrium calculations; and titrimetric, gravimetric, acid-base, oxidation-reduction, and compleximetric methods. Upon completion, students should be able to perform classical quantitative analytical procedures.

CIS 001 Microcomputer Skills Lab - - - -
Prerequisites: None
Corequisites: None
This lab is designed to support the technical microcomputer courses by offering supplementary assistance in various software programs such as computer keyboarding, word processing and programming.

CIS 070 Fundamentals of Computing 0 2 0 1
Prerequisites: None
Corequisites: None
This course covers fundamental functions and operations of the computer. Topics include identification of components, overview of operating systems, and other basic computer operations. Upon completion, students should be able to operate computers, access files, print documents and perform basic applications operations.

CIS 110 Introduction to Computers 2 2 0 3
Prerequisites: RED 090
Corequisites: None
This course provides an introduction to computers and computing. Topics include the impact of computers on society, ethical issues, and hardware/software applications, including spreadsheets, databases, word processors, graphics, the Internet, and operating systems. Upon completion, students should be able to demonstrate an understanding of the role and function of computers and use the computer to solve problems.

CIS 111 Basic PC Literacy 1 2 0 2
Prerequisites: RED 080
Corequisites: None
This course provides a brief overview of computer concepts. Emphasis is placed on the use of personal computers and software applications for personal and workplace use. Upon completion, students should be able to demonstrate basic personal computer skills.

CIS 115 Introduction to Programming and Logic 2 2 0 3
Prerequisites: MAT 070, RED 090
Corequisites: None
This course introduces computer programming and problem solving in a programming environment, including an introduction to operating systems, text editor, and a language translator. Topics include language syntax, data types, program organization, problem-solving methods, algorithm design, and logic control structures. Upon completion, students should be able to manage files with operating system commands, use top-down algorithm design, and implement algorithmic solutions in a programming language.

CIS 118 See CTS 118.
CIS 120 See CTS 130.
CIS 121 See CTS 250.
CIS 122 Introduction to Business Computers 2 2 0 3
Prerequisites: CIS 110 or CIS 111
Corequisites: None
This course provides preparation in solving business problems using computers. Topics include hardware and software concepts, the DOS operating system, Windows, spreadsheets, and communications. Upon completion, students should be able to use DOS commands, navigate a Windows environment, use spreadsheet capabilities, and access information in a business environment.

CIS 130 See NOS 110.
CIS 135 See CTS 120.
CIS 143 See WEB 186.
CIS 144 See NOS 111.
CIS 145 See NOS 130.
CIS 147 See NOS 230.
CIS 152 See DBA 110.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 153</td>
<td>See DBA 115.</td>
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<tr>
<td>CIS 154</td>
<td>See DBA 112.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>CIS 155</td>
<td>Database Theory/Analysis</td>
<td>CIS 152 or CIS 157</td>
<td>None</td>
<td>2 2 0 3</td>
</tr>
<tr>
<td>CIS 157</td>
<td>See DBA 120.</td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>CIS 162</td>
<td>MM Presentation Software</td>
<td>None</td>
<td>None</td>
<td>2 2 0 3</td>
</tr>
<tr>
<td>CIS 163</td>
<td>Programming Interfaces Internet</td>
<td>CIS 110 or CIS 111</td>
<td>None</td>
<td>2 2 0 3</td>
</tr>
<tr>
<td>CIS 165</td>
<td>Desktop Publishing I</td>
<td>None</td>
<td>None</td>
<td>2 2 0 3</td>
</tr>
<tr>
<td>CIS 166</td>
<td>Desktop Publishing II</td>
<td>CIS 165</td>
<td>None</td>
<td>2 2 0 3</td>
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<tr>
<td>CIS 169</td>
<td>See CTS 125.</td>
<td></td>
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<tr>
<td>CIS 170</td>
<td>See CTS 155.</td>
<td></td>
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<tr>
<td>CIS 171</td>
<td>See CTS 255.</td>
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<tr>
<td>CIS 172</td>
<td>See WEB 110.</td>
<td></td>
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</tr>
<tr>
<td>CIS 175</td>
<td>See NOS 231.</td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>CIS 192</td>
<td>Selected Topics in Information Systems</td>
<td>Varies, based on topic</td>
<td>None</td>
<td>-</td>
</tr>
<tr>
<td>CIS 193</td>
<td>Selected Topics in Information Systems</td>
<td>Varies, based on topic</td>
<td>None</td>
<td>-</td>
</tr>
<tr>
<td>CIS 200</td>
<td>See CTS 230.</td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>CIS 215</td>
<td>Hardware Installation/ Maintenance</td>
<td>CIS 110 or CIS 111 or CIS 115</td>
<td>None</td>
<td>2 3 0 3</td>
</tr>
<tr>
<td>CIS 217</td>
<td>See CTS 217.</td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>CIS 219</td>
<td>Advanced PC Application Development</td>
<td>CIS 116</td>
<td>None</td>
<td>2 3 0 3</td>
</tr>
<tr>
<td>CIS 220</td>
<td>See CTS 230.</td>
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<tr>
<td>CIS 226</td>
<td>See CTS 287.</td>
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<tr>
<td>CIS 228</td>
<td>See CTS 240.</td>
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</tr>
<tr>
<td>CIS 235</td>
<td>Advanced PC Diagnostic/Configuration</td>
<td>CIS 135 or CIS 215</td>
<td>None</td>
<td>2 2 0 3</td>
</tr>
</tbody>
</table>

This course provides an introduction to desktop publishing software capabilities. Emphasis is placed on efficient use of a page layout software package to create, design, and print publications, page layout/ software compatibility and integration of specialized peripherals. Upon completion, students should be able to prepare publications given design specifications.
### COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credits</th>
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<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 245</td>
<td>Operating System − Multi-User</td>
<td>2 3 0 3</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>CIS 257</td>
<td>Database Programming II</td>
<td>2 2 0 3</td>
<td>CIS 157</td>
<td>None</td>
</tr>
<tr>
<td>CIS 258</td>
<td>Seminar in Information Systems</td>
<td>- - - 3</td>
<td>CIS 153</td>
<td>None</td>
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<tr>
<td>CIS 260</td>
<td>Business Graphics Applications</td>
<td>2 2 0 3</td>
<td>CIS 110 or CIS 111</td>
<td>None</td>
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<tr>
<td>CIS 270</td>
<td>Seminar in MCDST</td>
<td>1 2 0 2</td>
<td>CIS 116</td>
<td>None</td>
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<tr>
<td>CIS 293</td>
<td>Selected Topics in Information Systems: FrontPage</td>
<td>2 2 0 3</td>
<td>CIS 110 or CIS 111</td>
<td>CIS 172</td>
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<tr>
<td>CIS 297</td>
<td>Seminar in MCDST</td>
<td>2 3 0 3</td>
<td>CIS 110 or CIS 111</td>
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<tr>
<td>CIS 254</td>
<td>See DBA 210.</td>
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<tr>
<td>CIS 255</td>
<td>See DBA 230.</td>
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<tr>
<td>CIS 256</td>
<td>See DBA 240.</td>
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<tr>
<td>CIV 110</td>
<td>Statics/Strength of Materials</td>
<td>2 6 0 4</td>
<td>MAT 121</td>
<td>None</td>
</tr>
<tr>
<td>CIV 111</td>
<td>Soils and Foundations</td>
<td>2 3 0 3</td>
<td>CIV 110 or MEC 250</td>
<td>None</td>
</tr>
<tr>
<td>CIS 259</td>
<td>See DBA 289.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CIS 260</td>
<td>Business Graphics Applications</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CIV 112</td>
<td>Civil/Surveying CAD</td>
<td></td>
<td>ARC 114 or DFT 110 or DFT 111 or EGR 115</td>
<td>None</td>
</tr>
<tr>
<td>CIV 215</td>
<td>Engineering Materials</td>
<td>1 3 0 2</td>
<td>None</td>
<td>None</td>
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<tr>
<td>CIV 299</td>
<td>Seminar in Information Systems</td>
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<tr>
<td>CIV 211</td>
<td>Hydraulics and Hydrology</td>
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<td>CIV 110 or MEC 250</td>
<td>None</td>
</tr>
<tr>
<td>CIV 221</td>
<td>Steel and Timber Design</td>
<td></td>
<td>CIV 110 or MEC 250</td>
<td>None</td>
</tr>
</tbody>
</table>

This course includes operating systems concepts for multi-user systems. Topics include hardware management, file and memory management, system configuration/optimization, and utilities. Upon completion, students should be able to perform operating system functions in a multi-user environment.

This course is designed to enhance programming skills developed in CIS 157. Topics include application development with GUI front ends and embedded programming. Upon completion, students should be able to develop a DBMS application which includes a GUI front end and report generation.

This course provides an opportunity to explore areas of current interest in Information Systems. Emphasis is placed on the development of critical listening skills and the presentation of seminar issues. Upon completion, students should be able to critically analyze issues and establish informed opinions.

This course presents an overview of soil as a construction material using both analysis and testing procedures. Topics include index properties, classification, stress analysis, compressibility, compaction, dewatering, excavation, stabilization, settlement, and foundations. Upon completion, students should be able to analyze simple structures.

This course covers the behavior and properties of Portland cement and asphaltic concretes and laboratory and field testing. Topics include cementing agents and aggregates; water and admixtures; proportioning, production, placing, consolidation, and curing; and inspection methods. Upon completion, students should be able to proportion concrete mixes to attain predetermined strengths and other properties and perform standard control tests.

This course introduces the peripherals and attendant software needed to create stand-alone or networked interactive multimedia applications. Emphasis is placed on using audio, video, graphic, and resources; using peripheral-specific software; and understanding file formats. Upon completion, students should be able to utilize multimedia peripherals to create various sound and visual files to create a multimedia application.

This course introduces civil/surveying computer-aided drafting (CAD) software. Topics include drawing, editing, and dimensioning commands; plotting; and other related civil/surveying topics. Upon completion, students should be able to produce civil/surveying drawings using CAD software. This course utilizes Land Development Desktop software.

This course introduces the peripherals, and attendant software needed to create stand-alone or networked interactive multimedia applications. Emphasis is placed on using audio, video, graphic, and resources; using peripheral-specific software; and understanding file formats. Upon completion, students should be able to utilize multimedia peripherals to create various sound and visual files to create a multimedia application.

This course introduces civil/surveying computer-aided drafting (CAD) software. Topics include drawing, editing, and dimensioning commands; plotting; and other related civil/surveying topics. Upon completion, students should be able to produce civil/surveying drawings using CAD software. This course utilizes Land Development Desktop software.

This course introduces the basic engineering principles and characteristics of hydraulics and hydrology. Topics include precipitation and runoff, fluid statics and dynamics, flow measurement, and pipe and open channel flow. Upon completion, students should be able to analyze and size drainage structures.

This course introduces the basic elements of steel and timber structures. Topics include the analysis and design of steel and timber structures.
CIV 230 Construction Estimating  2 3 0 3
Prerequisites: ARC 111, ARC 114, CIS 110, CIS 111, DFT 111, or EGR 115
Corequisites: None
This course covers quantity take-offs of labor, materials, and equipment and calculation of direct and overhead costs for a construction project. Topics include the interpretation of working drawings and specifications, types of contracts and estimates, building codes, bidding techniques and procedures, and estimating software. Upon completion, students should be able to prepare a detailed cost estimate and bid documents for a construction project.

CIV 240 Project Management  2 3 0 3
Prerequisites: ARC 114 or DFT 111 or EGR 115
Corequisites: None
This course introduces construction planning and scheduling techniques and project management software. Topics include construction safety, operation analysis, construction scheduling, construction control systems, claims and dispute resolutions, project records, and documentation. Upon completion, students should be able to demonstrate an understanding of the roles of construction project participants, maintain construction records, and prepare construction schedules.

CIV 250 Civil Engineering Technology Project  1 3 0 2
Prerequisites: CIV 111, CIV 125, CIV 211, CIV 221, CIV 240, SRV 111
Corequisites: None
This course includes an integrated team approach to civil engineering technology projects. Emphasis is placed on project proposal, site selection, analysis/design of structures, construction material selection, time and cost estimating, planning, and management of a project. Upon completion, students should be able to apply team concepts, prepare estimates, submit bid proposals, and manage projects. This course introduces the student to GPS (Global Positioning Systems), methods, techniques, and theory; the student must use this knowledge as well as other knowledge acquired while at the college to perform a capstone project that will involve oral presentation and written report to faculty, college officials, and a professional audience.

CJC 100 Basic Law Enforcement Training  9 30 0 19
Prerequisites: None
Corequisites: None
This course covers the basic skills and knowledge needed for entry-level employment as a law enforcement officer in North Carolina. Topics are divided into general units of study: legal, patrol duties, law enforcement communications, investigations, practical application and sheriff-specific. Upon successful completion, the student will be able to demonstrate competence in the topics and areas required for the state comprehensive certification examination. This is a certificate-level course.

CJC 111 Introduction to Criminal Justice  3 0 0 3
Prerequisites: ENG 090, RED 090
Corequisites: None
This course introduces the components and processes of the criminal justice system. Topics include history, structure, functions, and philosophy of the criminal justice system and their relationship to life in our society. Upon completion, students should be able to define and describe the major system components and their interrelationships and evaluate career options.

CJC 112 Criminology  3 0 0 3
Prerequisites: None
Corequisites: None
This course introduces deviant behavior as it relates to criminal activity. Topics include theories of crime causation; statistical analysis of criminal behavior; past, present, and future social control initiatives; and other related topics. Upon completion, students should be able to explain and discuss various theories of crime causation and societal response.

CJC 113 Juvenile Justice  3 0 0 3
Prerequisites: None
Corequisites: None
This course covers the juvenile justice system and related juvenile issues. Topics include an overview of the juvenile justice system, treatment and prevention programs, special areas and laws unique to juveniles, and other related topics. Upon completion, students should be able to identify/discuss juvenile court structure/procedures, function and jurisdiction of juvenile agencies, processing/detention of juveniles, and case disposition.

CJC 114 Investigative Photography  1 2 0 2
Prerequisites: CJC 111
Corequisites: None
This course covers the operation of various photographic equipment and its application to criminal justice. Topics include using various cameras, proper exposure of film, developing film/prints, and preparing photographic evidence. Upon completion, students should be able to demonstrate and explain the role of photography and proper film exposure and development techniques.

CJC 120 Interviews/Interrogations  1 2 0 2
Prerequisites: None
Corequisites: None
This course covers basic and special techniques employed in criminal justice interviews and interrogations. Emphasis is placed on the interview/interrogation process, including interpretation of verbal and physical behavior and legal perspectives. Upon completion, students should be able to conduct interviews/interrogations in a legal, efficient, and professional manner and obtain the truth from suspects, witnesses, and victims.

CJC 121 Law Enforcement Operations  3 0 0 3
Prerequisites: None
Corequisites: None
This course introduces fundamental law enforcement operations. Topics include the contemporary evolution of law enforcement operations and related issues. Upon completion, students should be able to explain theories, practices, and issues related to law enforcement operations.

CJC 122 Community Policing  3 0 0 3
Prerequisites: None
Corequisites: None
This course covers the historical, philosophical, and practical dimensions of community policing. Emphasis is placed on the empowerment of police and the community to find solutions to problems by forming partnerships. Upon completion, students should be able to define community policing, describe how community policing strategies solve problems, and compare community policing to traditional policing.
CJC 131 Criminal Law  
**Prerequisites:** None  
**Corequisites:** None  
This course covers the history/evolution/principles and contemporary applications of criminal law. Topics include sources of substantive law, classification of crimes, parties to crime, elements of crimes, matters of criminal responsibility, and other related topics. Upon completion, students should be able to discuss the sources of law and identify, interpret, and apply the appropriate statutes/elements.

CJC 132 Court Procedure and Evidence  
**Prerequisites:** None  
**Corequisites:** None  
This course covers judicial structure/process/procedure from incident to disposition, kinds and degrees of evidence, and the rules governing admissibility of evidence in court. Topics include consideration of state and federal courts, arrest, search and seizure laws, exclusionary and statutory rules of evidence, and other related issues. Upon completion, students should be able to identify and discuss procedures necessary to establish a lawful arrest/search, proper judicial procedures, and the admissibility of evidence.

CJC 141 Corrections  
**Prerequisites:** ENG 090, RED 090  
**Corequisites:** None  
This course covers the history, major philosophies, components, and current practices and problems of the field of corrections. Topics include historical evolution, functions of the various components, alternatives to incarceration, treatment programs, inmate control, and other related topics. Upon completion, students should be able to explain the various components, processes, and functions of the correctional system.

CJC 144 Crime Scene Processing  
**Prerequisites:** CJC 111  
**Corequisites:** None  
This course introduces the theories and practices of crime scene processing and investigating. Topics include legal considerations at the crime scene, processing indoor and outdoor scenes, recording, note taking, collection and preservation of evidence and submission to the crime laboratory. Upon completion, the student should be able to evaluate and search various crime scenes and demonstrate the appropriate techniques. **This course is a unique concentration requirement in the Latent Evidence concentration in the Criminal Justice Technology Program.**

CJC 145 Crime Scene CAD  
**Prerequisites:** CIS 111 and CJC 111  
**Corequisites:** None  
This course introduces the student to CAD software for crime scenes. Topics include drawing, editing, file management and drafting theory and practices. Upon completion, students should be able to produce and plot a crime scene drawing.

CJC 146 Trace Evidence  
**Prerequisites:** CJC 111  
**Corequisites:** None  
This course provides a study of trace evidence as it relates to forensic science. Topics include collection, packaging, and preservation of trace evidence from crime scenes such as bombings, fires and other scenes. Upon completion, students should be able to demonstrate the fundamental concepts of trace evidence collection, preservation and submission to the crime laboratory. **This course is a unique concentration requirement in the Latent Evidence concentration in the Criminal Justice Technology Program.**

CJC 212 Ethics and Community Relations  
**Prerequisites:** None  
**Corequisites:** None  
This course covers ethical considerations and accepted standards applicable to criminal justice organizations and professionals. Topics include ethical systems; social change, values, and norms; cultural diversity; citizen involvement in criminal justice issues; and other related topics. Upon completion, students should be able to apply ethical considerations to the decision-making process in identifiable criminal justice situations.

CJC 213 Substance Abuse  
**Prerequisites:** None  
**Corequisites:** None  
This course is a study of substance abuse in our society. Topics include the history and classifications of drug abuse and the social, physical, and psychological impact of drug abuse. Upon completion, students should be able to identify various types of drugs, their effects on human behavior and society, and treatment modalities.

CJC 215 Organization and Administration  
**Prerequisites:** None  
**Corequisites:** None  
This course introduces the components and functions of organization and administration as it applies to the agencies of the criminal justice system. Topics include operations/functions of organizations; recruiting, training, and retention of personnel; funding and budgeting; communications; span of control and discretion; and other related topics. Upon completion, students should be able to identify and discuss the basic components and functions of a criminal justice organization and its administrative operations.

CJC 221 Investigative Principles  
**Prerequisites:** CJC 111  
**Corequisites:** None  
This course introduces the theories and fundamentals of the investigative process. Topics include crime scene/incident processing, information gathering techniques, collection/preservation of evidence, preparation of appropriate reports, court presentations, and other related topics. Upon completion, students should be able to identify, explain, and demonstrate the techniques of the investigative process, report preparation, and courtroom presentation.

CJC 222 Criminalistics  
**Prerequisites:** CJC 221  
**Corequisites:** None  
This course covers the functions of the forensic laboratory and its relationship to successful criminal investigations and prosecutions. Topics include advanced crime scene processing, investigative techniques, current forensic technologies, and other related topics. Upon completion, students should be able to identify and collect relevant evidence at simulated crime scenes and request appropriate laboratory analysis of submitted evidence.

CJC 223 Organized Crime  
**Prerequisites:** None  
**Corequisites:** None  
This course introduces the evolution of traditional and non-traditional organized crime and its effect on society and the criminal justice system. Topics include identifying individuals and groups involved in organized crime, areas of criminal activity, legal and political responses to organized crime, and other related...
topics. Upon completion, students should be able to identify the groups and activities involved in organized crime and the responses of the criminal justice system.

CJC 231 Constitution Law 3 0 0 3
Prerequisites: None
Corequisites: None
The course covers the impact of the Constitution of the United States and its amendments on the criminal justice system. Topics include the structure of the Constitution and its amendments, court decisions pertinent to contemporary criminal justice issues, and other related topics. Upon completion, students should be able to identify/discuss the basic structure of the United States Constitution and the rights/procedures as interpreted by the courts.

CJC 232 Civil Liability 3 0 0 3
Prerequisites: None
Corequisites: None
This course covers liability issues for the criminal justice professional. Topics include civil rights violations, tort liability, employment issues, and other related topics. Upon completion, students should be able to explain civil trial procedures and discuss contemporary liability issues.

CJC 233 Correctional Law 3 0 0 3
Prerequisites: None
Corequisites: None
This course introduces statutory/case law pertinent to correctional concepts, facilities, and related practices. Topics include examination of major legal issues encompassing incarceration, probation, parole, restitutions, pardon, and restoration of rights, and other related topics. Upon completion, students should be able to identify/discuss legal issues which directly affect correctional systems and personnel.

CJC 241 Community-Based Corrections 3 0 0 3
Prerequisites: None
Corequisites: None
This course covers programs for convicted offenders that are used both as alternatives to incarceration and in post-incarceration situations. Topics include offenders, diversion, house arrest, restitution, community service, probation, and paroling, including both public and private participation, and other related topics. Upon completion, students should be able to identify/discuss the various programs from the perspective of the criminal justice professional, the offender, and the community.

CJC 244 Footwear and Tire Imprints 3 0 3
Prerequisites: None
Corequisites: None
This course provides a study of the fundamental concepts of footwear and tire imprint evidence as related to forensic science. Topics include proper photographic recording, casting, recognition of wear patterns and imprint identification. Upon completion, the student should be able to recognize, record, photograph, and identify footwear and tire imprints.

CJC 245 Friction Ridge Analysis 2 3 0 3
Prerequisites: CJC 111 or CJC 221
Corequisites: None
This course introduces the basic elements of fingerprint technology and techniques applicable to the criminal justice field. Topics include the history and meaning of fingerprints, pattern types and classification, filing sequence, searching and referencing. Upon completion, students should be able to discuss and demonstrate the fundamental techniques of basic fingerprint technology. This course is a unique concentration requirement in the Latent Evidence concentration in the Criminal Justice Technology Program.

CJC 246 Adv Friction Ridge Analysis 2 3 0 3
Prerequisites: CJC 245, CJC 221
Corequisites: None
This course introduces the theories and processes of advanced friction ridge analysis. Topics include evaluation of friction ridges, chart preparation, comparative analysis for valued determination rendering proper identification, chemical enhancement and AFIS preparation and usage. Upon completion, students must show an understanding of proper procedures for friction ridge analysis through written testing and practical exercises. This course is a unique concentration requirement in the Latent Evidence concentration in the Criminal Justice Technology Program.

CJC 293 Selected Topics in Criminal Justice Technology - - - 3
Prerequisites: Varies, based on topics
Corequisites: None
This course provides an opportunity to explore areas of current interest in Criminal Justice Technology. Emphasis is placed on subject matter appropriate to criminal justice. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

CMT 112 Construction Mgt I 4 4 0 6
Prerequisites: None
Corequisites: None
This course introduces students to the field of construction management technology. Topics include job planning, work methods, materials, equipment, and other related topics. Upon completion, students should be able to demonstrate advanced knowledge of methods, materials, equipment, and the logical sequence of a construction project.

CMT 114 Construction Mgt II 4 4 0 6
Prerequisites: CMT 112
Corequisites: None
This course is designed to advance students in the field of construction management technology. Topics include additional job planning, work methods, materials, equipment, and other related topics. Upon completion, students should be able to demonstrate advanced knowledge of methods, materials, equipment, and the logical sequence to complete a construction project.

CMT 192 Selected Topics in CMT 1 3 0 2
Prerequisites: None
Corequisites: None
This course provides an opportunity to explore areas of current interest in construction management technology. Emphasis is placed on subject matter appropriate to construction management technology. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

CMT 210 Professional Construction Supervision 3 0 0 3
Prerequisites: None
Corequisites: None
This course introduces the student to the fundamentals of effective supervision emphasizing professionalism through knowledge and applied skills. Topics include safety, planning and scheduling, contract, problem-solving, communications, conflict resolution, recruitment, employment laws and regulations, leadership, motivation, teamwork, discipline, setting objectives, and training. Upon completion, the student should be able to demonstrate the basic skills necessary to be successful as a supervisor in the construction industry.
### COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>COE 111</td>
<td>Co-op Work Experience I</td>
<td>0 0 20 2</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>CMT 210</td>
<td>Total Safety Performance</td>
<td>3 0 0 3</td>
<td>None</td>
<td>None</td>
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<tr>
<td>CMT 214</td>
<td>Planning and Scheduling</td>
<td>3 0 0 3</td>
<td>CMT 210 and BPR 130</td>
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<td>CMT 216</td>
<td>Costs and Productivity</td>
<td>3 0 0 3</td>
<td>CMT 210</td>
<td>None</td>
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<tr>
<td>CMT 218</td>
<td>Human Relations Issues</td>
<td>3 0 0 3</td>
<td>CMT 210</td>
<td>None</td>
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<tr>
<td>CMT 296</td>
<td>Seminar in Construction Mgt</td>
<td>1 0 0 1</td>
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<td>COE 112</td>
<td>Co-op Work Experience I</td>
<td>0 0 30 3</td>
<td>None</td>
<td>None</td>
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<tr>
<td>COE 113</td>
<td>Co-op Work Experience I</td>
<td>0 0 40 4</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>COE 114</td>
<td>Co-op Work Experience I</td>
<td>0 0 10 1</td>
<td>None</td>
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<tr>
<td>COE 115</td>
<td>Work Experience Seminar I</td>
<td>1 0 0 1</td>
<td>None</td>
<td>COE 111 or COE 112 or COE 113 or COE 114</td>
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<tr>
<td>COE 121</td>
<td>Co-op Work Experience II</td>
<td>0 0 20 2</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>CMT 212</td>
<td>Total Safety Performance</td>
<td>3 0 0 3</td>
<td>None</td>
<td>CMT 210</td>
</tr>
<tr>
<td>CMT 213</td>
<td>Co-op Work Experience II</td>
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<td>CMT 215</td>
<td>Corequisites</td>
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<td>CMT 217</td>
<td>Corequisites</td>
<td></td>
<td>None</td>
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</tr>
</tbody>
</table>

Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.
### COURSE DESCRIPTIONS

**COE 123 Co-op Work Experience III**

- **Prerequisites:** None
- **Corequisites:** None
- This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

- **Credits:** 0 0 30 3

**COM 110 Introduction to Communication**

- **Prerequisites:** None
- **Corequisites:** None
- This course provides an overview of the basic concepts of communication and the skills necessary to communicate in various contexts. Emphasis is placed on communication theories and techniques used in interpersonal, public, intercultural, and mass communication situations. Upon completion, students should be able to explain and illustrate the forms and purposes of human communication in a variety of contexts.

- **Credits:** 3 0 0 3

**COE 124 Co-op Work Experience II**

- **Prerequisites:** None
- **Corequisites:** None
- This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

- **Credits:** 0 0 40 4

**COE 125 Work Experience Seminar II**

- **Prerequisites:** None
- **Corequisites:** COE 121 or COE 122 or COE 123 or COE 124
- This is a seminar course designed to enrich the student's cooperative education work experience.

- **Credits:** 1 0 0 1

**COE 131 Co-op Work Experience III**

- **Prerequisites:** None
- **Corequisites:** None
- This course provides work experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.

- **Credits:** 0 0 10 1

**COM 111 Voice and Diction I**

- **Prerequisites:** None
- **Corequisites:** None
- This course provides guided practice in the proper production of speech. Emphasis is placed on improving speech, including breathing, articulation, pronunciation, and other vocal variables. Upon completion, students should be able to demonstrate effective natural speech in various contexts.

- **Credits:** 3 0 0 3

**COE 120 Interpersonal Communication**

- **Prerequisites:** None
- **Corequisites:** None
- This course introduces the practices and principles of interpersonal communication in both dyadic and group settings. Emphasis is placed on the communication process, perception, listening, self-disclosure, speech apprehension, ethics, nonverbal communication, conflict, power, and dysfunctional communication relationships. Upon completion, students should be able to demonstrate interpersonal communication skills, apply basic principles of group discussion, and manage conflict in interpersonal communication situations.

- **Credits:** 3 0 0 3

**COM 130 Nonverbal Communication**

- **Prerequisites:** COM 120
- **Corequisites:** None
- This course introduces the contemporary study of nonverbal communication in daily life. Topics include haptics, kinesics, proxemics, facial displays, and appearance. Upon completion, students should be able to analyze/interpret nonverbal communication and demonstrate greater awareness of their own nonverbal communication habits.

- **Credits:** 3 0 0 3

**COM 140 Intro Intercultural Communication**

- **Prerequisites:** RED 090 and ENG 090
- **Corequisites:** None
- This course introduces techniques of cultural research, definitions, functions, characteristics, and impacts of cultural differences in public address. Emphasis is placed on how diverse backgrounds influence the communication act and how cultural perceptions and experiences determine how one sends and receives messages. Upon completion, students should be able to demonstrate an understanding of the principles and skills needed to become effective in communicating outside one's primary culture. **This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement**

- **Credits:** 3 0 0 3

**COM 160 Small Group Communication**

- **Prerequisites:** RED 090 and ENG 090
- **Corequisites:** None
- This course provides an overview of the theory, practice, and critical analysis of communication in the small group setting. Emphasis is placed on group development, conflict, and conformity; leadership skills and styles; group roles and ranks; and decision making, problem solving, and conflict resolution. Upon completion, students should be able to apply topics of
COURSE DESCRIPTIONS

gender, culture, and social-emotional functions within group settings. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

COM 231 Public Speaking 3 0 0 3
Prerequisites: ENG 111
Corequisites: None
This course provides instruction and experience in preparation and delivery of speeches within a public setting and group discussion. Emphasis is placed on research, preparation, delivery, and evaluation of informative, persuasive, and special occasion public speaking. Upon completion, students should be able to prepare and deliver well-organized speeches and participate in group discussion with appropriate audiovisual support.

COM 232 Election Rhetoric 3 0 0 3
Prerequisites: ENG 090, RED 090
Corequisites: None
This course provides an overview of communication styles and topics characteristic of election campaigns. Topics include election speeches, techniques used in election campaigns, and election speech topics. Upon completion, students should be able to identify and analyze techniques and styles typically used in election campaigns.

COM 233 Persuasive Speaking 3 0 0 3
Prerequisites: ENG 112 or ENG 113
Corequisites: None
This course introduces theory and history of persuasive speaking, covering critical thinking skills in analyzing problems, assessing solutions, and communicating the information to an audience. Emphasis is placed on analysis, evidence, reasoning, and library and field research used to enhance persuasive public speaking skills. Upon completion, students should be able to apply the principles of persuasive speaking in a public setting.

COM 251 Debate I 3 0 0 3
Prerequisites: None
Corequisites: None
This course introduces the principles of debate. Emphasis is placed on argument, refutation, research, and logic. Upon completion, students should be able to use research skills and logic in the presentation of ideas within the context of formal debate.

COS 111 Cosmetology Concepts I 4 0 0 4
Prerequisites: None
Corequisites: COS 112
This course introduces basic cosmetology concepts. Topics include safety, first aid, sanitation, bacteriology, anatomy, diseases and disorders, hygiene, product knowledge, chemistry, ethics, manicures, and other related topics. Upon completion, students should be able to safely and competently apply cosmetology concepts in the salon setting.

COS 112 Salon I 2 4 0 8
Prerequisites: None
Corequisites: COS 111
This course introduces basic salon services. Topics include scalp treatments, shampooing, rinsing, hair color, design, haircutting, permanent waving, pressing, relaxing, wigs, and other related topics. Upon completion, students should be able to safely and competently demonstrate salon services.

COS 113 Cosmetology Concepts II 4 0 0 4
Prerequisites: None
Corequisites: COS 114
This course covers more comprehensive cosmetology concepts. Topics include safety, product knowledge, chemistry, manicuring, chemical restructuring, and hair coloring. Upon completion, students should be able to safely and competently apply these cosmetology concepts in the salon setting.

COS 113a Cosmetology Concepts II Part 1 1 0 0 1
Prerequisites: None
Corequisites: COS 114a
This course covers more comprehensive cosmetology concepts. Topics include safety, product knowledge, chemistry, manicuring, chemical restructuring, and hair coloring. Upon completion, students should be able to safely and competently apply these cosmetology concepts in the salon setting. This is part one of a two-part course.

COS 113b Cosmetology Concepts II Part 2 3 0 0 3
Prerequisites: None
Corequisites: COS 114b
This course covers more comprehensive cosmetology concepts. Topics include safety, product knowledge, chemistry, manicuring, chemical restructuring, and hair coloring. Upon completion, students should be able to safely and competently apply these cosmetology concepts in the salon setting. This is part two of a two-part course.

COS 114 Salon II 2 4 0 8
Prerequisites: None
Corequisites: COS 113
This course provides experience in a simulated salon setting. Topics include basic skin care, manicuring, nail application, scalp treatments, shampooing, rinsing, hair color, design, haircutting, chemical restructuring, pressing, wigs, and other related topics. Upon completion, students should be able to safely and competently demonstrate these salon services.

COS 114a Salon II Part 1 0 9 0 3
Prerequisites: None
Corequisites: COS 113a
This course provides experience in a simulated salon setting. Topics include basic skin care, manicuring, nail application, scalp treatments, shampooing, rinsing, hair color, design, haircutting, chemical restructuring, pressing, wigs, and other related topics. Upon completion, students should be able to safely and competently demonstrate these salon services. This is part one of a two-part course.

COS 114b Salon II Part 2 1 5 0 5
Prerequisites: None
Corequisites: COS 113b
This course provides experience in a simulated salon setting. Topics include basic skin care, manicuring, nail application, scalp treatments, shampooing, rinsing, hair color, design, haircutting, chemical restructuring, pressing, wigs, and other related topics. Upon completion, students should be able to safely and competently demonstrate these salon services. This is part two of a two-part course.

COS 115 Cosmetology Concepts III 4 0 0 4
Prerequisites: None
Corequisites: COS 116
This course covers more comprehensive cosmetology concepts. Topics include safety, product knowledge, salon management, salesmanship, skin care, electricity/light therapy, wigs, thermal hair styling, lash and brow tinting, superfluous hair removal, and other related topics. Upon completion, students should be able to safely and competently apply these cosmetology concepts in the salon setting.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>COS 116</td>
<td>Salon III</td>
<td>1 2 0 4</td>
<td>This course provides comprehensive experience in a simulated salon setting. Emphasis is placed on intermediate-level of skin care, manicuring, scalp treatments, shampooing, hair color, design, hair cutting, chemical restructuring, pressing, and other related topics. Upon completion, students should be able to safely and competently demonstrate these salon services.</td>
</tr>
<tr>
<td>COS 117</td>
<td>Cosmetology Concepts IV</td>
<td>2 0 0 2</td>
<td>This course covers advanced cosmetology concepts. Topics include chemistry and hair structure, advanced cutting and design, and an overview of all cosmetology concepts in preparation for the licensing examination. Upon completion, students should be able to demonstrate an understanding of these cosmetology concepts and meet program completion requirements.</td>
</tr>
<tr>
<td>COS 118</td>
<td>Salon IV</td>
<td>2 1 0 7</td>
<td>This course provides advanced experience in a simulated salon setting. Emphasis is placed on efficient and competent delivery of all salon services in preparation for the licensing examination and employment. Upon completion, students should be able to demonstrate competence in program requirements and the areas covered on the Cosmetology Licensing Examination and meet entry-level employment requirements.</td>
</tr>
<tr>
<td>COS 223</td>
<td>Contemp Hair Coloring</td>
<td>1 3 0 2</td>
<td>This course covers basic color concepts, hair coloring problems, and application techniques. Topics include color theory, terminology, contemporary techniques, product knowledge, and other related topics. Upon completion, students should be able to identify a client’s color needs and safely and competently perform color applications and correct problems.</td>
</tr>
<tr>
<td>COS 224</td>
<td>Trichology &amp; Chemistry</td>
<td>1 3 0 2</td>
<td>This course is a study of hair and the interaction of applied chemicals. Emphasis is placed on pH actions and the reactions and effects of chemical ingredients. Upon completion, students should be able to demonstrate an understanding of chemical terminology, pH testing, and chemical reactions on hair.</td>
</tr>
<tr>
<td>COS 225</td>
<td>Adv Contemp Hair Coloring</td>
<td>1 3 0 2</td>
<td>This course covers advanced techniques in coloring applications and problem solving situations. Topics include removing unwanted color, replacing pigment and re-coloring, removing coating, covering gray and white hair, avoiding color fading, and poor tint results. Upon completion, students should be able to apply problem-solving techniques in hair coloring situations.</td>
</tr>
<tr>
<td>COS 240</td>
<td>Contemporary Design</td>
<td>1 3 0 2</td>
<td>This course covers methods and techniques for contemporary designs. Emphasis is placed on contemporary designs and other related topics. Upon completion, students should be able to demonstrate and apply techniques associated with contemporary design.</td>
</tr>
<tr>
<td>CSC 120</td>
<td>Computing Fundamentals I</td>
<td>3 2 0 4</td>
<td>This course provides the essential foundation for the discipline of computing and a program of study in computer science, including the role of the professional. Topics include algorithm design, data abstraction, searching and sorting algorithms, and procedural programming techniques. Upon completion, students should be able to solve problems, develop algorithms, specify data types, perform sorts and searches, and use an operating system.</td>
</tr>
<tr>
<td>CSC 125</td>
<td>Introduction to Parallel Programming</td>
<td>2 2 0 3</td>
<td>This course introduces students to the techniques and tools used to write parallel programs. Topics include principles of parallel program design including architecture, algorithms, performance modeling, parallel programming standards, Message Passing Interface (MPI), OpenMP, API, and modern parallel languages. Upon completion, students should be able to discuss programming issues in a High Performance Computing system.</td>
</tr>
<tr>
<td>CSC 129</td>
<td>Technical Programming</td>
<td>2 3 0 3</td>
<td>This course introduces the analysis of technical problems by using different software tools. Emphasis is placed on solving technical problems using structured programming logic and tools such as a computer language, spreadsheet software, or an advanced programmable calculator. Upon completion, students should be able to derive solutions to complex technical problems using various software tools.</td>
</tr>
<tr>
<td>CSC 130</td>
<td>Computing Fundamentals II</td>
<td>3 2 0 4</td>
<td>This course introduces computer programming using the C programming language. Topics include input/output operations, sequence, selection, iteration, arithmetic operations, arrays tables, pointers, and other related topics. Upon completion, students should be able to design, code, test, and debug C language programs.</td>
</tr>
<tr>
<td>CSC 134</td>
<td>C++ Programming</td>
<td>2 3 0 3</td>
<td>This course introduces object-oriented computer programming using the C++ programming language. Topics include system operations, iteration, arithmetic operations, arrays, pointers, filters, and other related topics. Upon completion, students should be able to design, code, test, and debug C++ language programs. Additional topics will include classes, polymorphism, inheritance, operator overloading, and encapsulation.</td>
</tr>
</tbody>
</table>
COURSE DESCRIPTIONS

CSC 136  FORTRAN Programming  2 3 0 3
Prerequisites: None
Corequisites: None
This course introduces computer programming using the FORTRAN programming language. Topics include input/output operations, sequence, selection, iteration, arithmetic operations, arrays, subprograms, and other related topics. Upon completion, students should be able to design, code, test, and debug FORTRAN language programs.

CSC 139  Visual BASIC Programming  2 3 0 3
Prerequisites: MAT 070, RED 090
Corequisites: None
This course introduces event-driven computer programming using the Visual BASIC programming language. Topics include input/output operations, sequence, selection, iteration, arithmetic operations, arrays, forms, sequential files, and other related topics. Upon completion, students should be able to design, code, test, and debug Visual BASIC language programs. Students will learn the basic concepts of good interface design and program documentation.

CSC 142  Visual COBOL Prog  2 3 0 3
Prerequisites: None
Corequisites: None
This course introduces computer programming using the Visual COBOL programming language with structured programming principles. Topics include input/output operations, iteration, arithmetic operations, arrays, pointers, filters, and other related topics. Upon completion, students should be able to design, code, test and debug at a beginning level.

CSC 144  AS/400 CL Programming  2 3 0 3
Prerequisites: CIS 115 and NOS 211
Corequisites: None
This course introduces computer programming using the CL programming language. Topics include CL command structure, command parameters, creating CL programs, manipulating variables, writing commands to control jobs and workflow, and other related topics. Upon completion, students should be able to design, code, test and debug CL programs.

CSC 148  See CSC 151.

CSC 150  Visual RPG Prog  2 3 0 3
Prerequisites: None
Corequisites: None
This course introduces computer programming using the Visual RPG programming language with structured programming principles. Topics include input/output operations, iteration, arithmetic operations, arrays, pointers, filters, and other related topics. Upon completion, students should be able to design, code, test and debug at a beginning level.

CSC 151  JAVA Programming  2 3 0 3
Prerequisites: MAT 070, RED 090
Corequisites: CIS 115
This course introduces computer programming using the JAVA programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger.

CSC 152  SAS  2 3 0 3
Prerequisites: MAT 070, RED 090
Corequisites: CIS 115
This course introduces the fundamentals of SAS programming. Emphasis is placed on learning basic SAS commands and statements for solving a variety of data processing applications. Upon completion, students should be able to use SAS data and procedure steps to create SAS data sets, do statistical analysis, and general customized reports.

CSC 153  C# Programming  2 3 0 3
Prerequisites: MAT 070, RED 090
Corequisites: None
This course introduces computer programming using the C# programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test, debug, and implement objects using the appropriate environment at the beginning level.

CSC 160  See WEB 115.

CSC 175  See WEB 182.

CSC 185  See WEB 183.

CSC 192  Selected Topics: MFC Project  1 2 0 2
Prerequisites: CSC 234
Corequisites: None
This course provides an opportunity to explore areas of current interest in Computer Programming. Emphasis is placed on subject matter appropriate to computer programming. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

CSC 193  Selected Topics in: Oracle Performance Tuning  2 2 0 3
Prerequisites: CIS 255
Corequisites: None
This course provides an opportunity to explore areas of current interest in Computer Programming. Emphasis is placed on subject matter appropriate to computer programming. Upon completion, students should be able to demonstrate an understanding of the specific area of study. This course will prepare students for Oracle DBA certification.

CSC 198  Seminar in C Programming  2 2 0 3
Prerequisites: None
Corequisites: None
This course provides an opportunity to explore areas of current interest in Computer Programming. Emphasis is placed on the development of critical listening skills and the presentation of seminar issues. Upon completion, students should be able to critically analyze issues and establish informed opinions.

CSC 220  Machine Implementation of Algorithms  2 0 4
Prerequisites: CSC 120
Corequisites: MAT 271
This course covers the organization and operation of real computer systems at the assembly language level. Topics include mapping of statements and constructs onto machine instruction sequences, internal data types and structures representation, numerical computation, and iterative approximation methods. Upon completion, students should be able to analyze computer system organization, implement procedural language elements, and describe the programming language translation process.
<table>
<thead>
<tr>
<th>COURSE DESCRIPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CSC 225</strong> Advanced Parallel Programming</td>
</tr>
<tr>
<td>Prerequisites: CSC 125</td>
</tr>
<tr>
<td>Corequisites: None</td>
</tr>
<tr>
<td>The course introduces students to advanced topics in parallel programming and reviews available tools and libraries for parallel programming. Topics include partitioning and scheduling techniques, performance metrics and scalability, cluster environment programming, vector processing, compiler directives, code optimization and algorithms for parallel computers. Upon completion, students should be able to design an application in a HPC environment.</td>
</tr>
</tbody>
</table>

| **CSC 229** MPI Programming  | 2 3 0 3  |
| Prerequisites: CSC 125 | |
| Corequisites: None | |
| This course introduces students to the Message Passing Interface (MPI) library. Topics include writing programs using the MPI routines, adding parallelism to application code, collective operations, timing, manipulation communicators, PTP operations, and tuning parallel programs. Upon completion, students should be able to design and code a program using the MPI library. |

| **CSC 233** Advanced C  | 2 3 0 3  |
| Prerequisites: CSC 133 | |
| Corequisites: None | |
| This course is a continuation of CSC 133 using C with structured programming principles. Emphasis is placed on advanced arrays/tables, file management/processing techniques, data structures, sub-programs, interactive processing, sort/merge routines, and libraries. Upon completion, students should be able to design, code, test, debug, and document programming solutions. |

| **CSC 234** Advanced C++  | 2 3 0 3  |
| Prerequisites: CSC 134 | |
| Corequisites: None | |
| This course is a continuation of CSC 134 using C++ with structured programming principles. Emphasis is placed on advanced arrays/tables, file management/processing techniques, data structures, sub-programs, interactive processing, sort/merge routines, and libraries. Upon completion, students should be able to design, code, test, debug, and document programming solutions. Additional topics will include binary and textfile manipulation, virtual functions and classes, templates, class libraries, and windows programming. |

| **CSC 236** Advanced Fortran Programming  | 2 3 0 3  |
| Prerequisites: CSC 136 | |
| Corequisites: None | |
| This course is a continuation of CSC 136 using the Fortran programming language with structured programming principles. Emphasis is placed on advanced arrays/tables, file management/processing techniques, data structures, sub-programs, interactive processing, sort/merge routines, and libraries. Upon completion, students should be able to design, code, test, debug and document programming solutions. |

| **CSC 238** Adv RPG Programming  | 2 3 0 3  |
| Prerequisites: CSC 138 | |
| Corequisites: None | |
| This course is a continuation of CSC 138 using the RPG programming language with structured programming principles. Emphasis is placed on advanced arrays/tables, file management/processing techniques, data structures, sub-programs, interactive processing, sort/merge routines, and libraries. Upon completion, students should be able to design, code, test, debug and document programming solutions. |

| **CSC 239** Advanced Visual BASIC Programming  | 2 3 0 3  |
| Prerequisites: CSC 139 | |
| Corequisites: DBA 110 | |
| This course is a continuation of CSC 139 using Visual BASIC with structured programming principles. Emphasis is placed on advanced arrays/tables, file management/processing techniques, data structures, sub-programs, interactive processing, sort/merge routines, and libraries. Upon completion, students should be able to design, code, test, debug, and document programming solutions. Emphasis will be placed on linking to and manipulating a database through tables, queries, and customization using API calls. |

| **CSC 241** Adv Visual C++ Programming  | 2 3 0 3  |
| Prerequisites: CSC 141 | |
| Corequisites: None | |
| This course is a continuation of CSC 141 using the Visual C++ programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented such as the class debugger. Upon completion, students should be able to design, code, test, debug, and implement objects using the appropriate environment. |

| **CSC 242** Advanced Visual COBOL Programming  | 2 3 0 3  |
| Prerequisites: CSC 142 | |
| Corequisites: None | |
| This course is a continuation of CSC 142 using the Visual COBOL programming language with structured programming principles. Emphasis is placed on advanced arrays/tables, file management/processing techniques, data structures, sub-programs, interactive processing, sort/merge routines, and libraries. Upon completion, students should be able to design, code, test, debug, and document programming solutions. |

| **CSC 244** CICS Programming  | 4 2 0 5  |
| Prerequisites: CSC 235 | |
| Corequisites: None | |
| This course provides an in-depth study of interactive transaction processing using command level CICS. Topics include pseudocorversational programming, basic mapping support, control tables, storage areas, file maintenance, screen design, and EDF debugging. Upon completion, students should be able to design, code, test, debug, and document command level COBOL programs for menuing, record processing, browsing, and temporary storage. |

| **CSC 245** Advanced C/C++ Programming  | 2 3 0 3  |
| Prerequisites: CSC 133, CSC 134, CSC 140, CSC 141, or CSC 145 | |
| Corequisites: None | |
| This course covers additional operations using C dialects primarily relating to operating system interfacing. Topics include advanced file handling, interprocess communications, messages, semaphores, inter-language calls, signals, device drivers, sockets, and client/server techniques. Upon completion, students should be able to write and modify programs using advanced functions. |

| **CSC 246** Realtime Programming  | 2 3 0 3  |
| Prerequisites: A high-level or assembly programming language | |
| Corequisites: None | |
| This course covers the techniques for programming in a realtime environment. Topics include signals, critical sections, polling, interface devices, timing, open and closed loop control, speed/size optimization, and special considerations for embedded controllers. Upon completion, students should be able to write and modify interface routines used with time-critical applications. |
### COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Corequisites Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 247</td>
<td>Advanced Assembly Language</td>
<td>2 3 0 3</td>
<td>None</td>
<td>None</td>
<td>This course covers additional techniques used in efficient assembly language programs. Topics include memory models, re-entrant code, recursion, ROM-able code, disassembly, patching, device drivers, and interfacing to high-level languages. Upon completion, students should be able to create, patch, and optimize sub-programs for use in solving problems.</td>
</tr>
<tr>
<td>CSC 248</td>
<td>See WEB 215.</td>
<td></td>
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</tr>
<tr>
<td>CSC 249</td>
<td>Data Structures and Algorithms</td>
<td>2 3 0 3</td>
<td>CSC 132, CSC 133, CSC 134, CSC 135, CSC 136, CIS 137, CSC 151</td>
<td>None</td>
<td>This course introduces the data structures and algorithms frequently used in programming applications. Topics include lists, stacks, queues, dequeues, heaps, sorting, searching, mathematical operations, recursion, encryption, random numbers, algorithm testing, and standards. Upon completion, students should be able to design data structures and implement algorithms to solve various problems.</td>
</tr>
<tr>
<td>CSC 250</td>
<td>Advanced Visual RPG Programming</td>
<td>2 3 0 3</td>
<td>CSC 150</td>
<td>None</td>
<td>This course is a continuation of CSC 150 using the Visual RPG programming language with structured programming principles. Emphasis is placed on advanced arrays/tables, file management/processing techniques, data structures, sub-programs, interactive processing, sort/merge routines, and libraries. Upon completion, students should be able to design, write, and debug program solutions.</td>
</tr>
<tr>
<td>CSC 251</td>
<td>Advanced JAVA Programming</td>
<td>2 3 0 3</td>
<td>CSC 151</td>
<td>None</td>
<td>This course is a continuation of CSC 151 using the JAVA programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test, debug, and implement objects using the appropriate environment.</td>
</tr>
<tr>
<td>CSC 253</td>
<td>Advanced C# Programming</td>
<td>2 3 0 3</td>
<td>CSC 153</td>
<td>None</td>
<td>This course is a continuation of CSC 153 using the C# programming language with object-oriented programming principles. Emphasis is placed on event-driven programming methods, including creating and manipulating objects, classes, and using object-oriented tools such as the class debugger. Upon completion, students should be able to design, code, test, debug, and implement objects using the appropriate environment.</td>
</tr>
<tr>
<td>CSC 255</td>
<td>OpenMP Programming</td>
<td>2 3 0 3</td>
<td>CSC 125</td>
<td>None</td>
<td>This course introduces students to the basics of using the OpenMP programming standard. Topics include directive-based shared memory parallel processing, incremental parallelization, and developing portable code for shared memory architectures using the OpenMP model. Upon completion, students should be able to design and code a program using the OpenMP standard.</td>
</tr>
<tr>
<td>CSC 258</td>
<td>JAVA Enterprise Programs</td>
<td>2 3 0 3</td>
<td>CSC 148</td>
<td>CSC 248, CSC 251</td>
<td>This course provides a continuation to CSC 148 using the Java Enterprise Edition (JEE) programming architecture. Topics include distributed network applications, database connectivity, Enterprise Java Beans, servlets, collection frameworks, JNDI, RMI, JSP, multithreading XML and multimedia development. Upon completion, students should be able to program a client/server enterprise application using the JEE framework.</td>
</tr>
<tr>
<td>CSC 260</td>
<td>Programming in Another Language</td>
<td>2 2 0 3</td>
<td></td>
<td>None</td>
<td>This course provides in-depth coverage, with applications, of a programming language which was not covered in CSC 120, 130, 220, or 230. Emphasis is placed on using the covered language to develop well-structured programs to solve appropriate problems. Upon completion, students should be able to understand the uses, syntax, and limitations of the language while comparing similarities and differences with other languages.</td>
</tr>
<tr>
<td>CSC 275</td>
<td>HPC Algorithms</td>
<td>2 2 0 3</td>
<td>CSC 125</td>
<td>None</td>
<td>This course introduces students to the various algorithms available for HPC environments. Topics include distributed algorithms, programming models for massively parallel machines, various parallel standard template libraries, distributed-memory message-passing algorithms, minimal communication and latency-tolerant algorithms. Upon completion, students should be able to discuss and code a program using HPC algorithms.</td>
</tr>
<tr>
<td>CSC 278</td>
<td>JAVA Message Service</td>
<td>2 3 0 3</td>
<td>CSC 148</td>
<td>CSC 248, CSC 251</td>
<td>This course introduces the student to the Java Message Service (JMS), an application program interface that supports messaging between computers in a network. Topics include point-to-point models, transactions, reliability issues, durable subscriptions and introduces messaging within Enterprise JavaBeans technology. Upon completion, students should be able to complete a project using the JMS technology.</td>
</tr>
<tr>
<td>CSC 284</td>
<td>Emerging Computer Programming Technologies</td>
<td>2 3 0 3</td>
<td>None</td>
<td>None</td>
<td>This course provides students with the latest technologies and strategies in the field of Computer Programming. Emphasis is placed on the evaluation of developing Computer Programming Technologies and presenting those findings to the class. Upon completion, students should be able to critically analyze emerging Computer Programming Technologies and establish informed opinions.</td>
</tr>
<tr>
<td>CSC 285</td>
<td>See CSC 289.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSC 289</td>
<td>Programming Capstone Project</td>
<td>1 4 0 3</td>
<td>CTS 285</td>
<td>None</td>
<td>This course provides an opportunity to complete a significant programming project from the design phase through implementation with minimal instructor support. Emphasis is placed on the evaluation of developing Computer Programming Technologies and presenting those findings to the class. Upon completion, students should be able to critically analyze emerging Computer Programming Technologies and establish informed opinions.</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
<td>Prerequisites</td>
<td>Corequisites</td>
<td></td>
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</tr>
<tr>
<td>CSC 291</td>
<td>Selected Topics in Computer Programming: C++ Project</td>
<td>0 2 0 1</td>
<td>None</td>
<td>CSC 234</td>
<td></td>
</tr>
<tr>
<td>CSC 292</td>
<td>Selected Topics in Computer Programming: Visual Basic Project</td>
<td>1 2 0 2</td>
<td>CSC 239</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>CSC 293</td>
<td>Selected Topics: ORACLE Projects</td>
<td>- - - 3</td>
<td>CIS 257</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>CSC 296</td>
<td>Seminar in JAVA Project</td>
<td>2 0 0 1</td>
<td>CSC 148, CSC 251</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>CSC 297</td>
<td>ADO.NET</td>
<td>1 3 0 2</td>
<td>None</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>CST 241</td>
<td>Planning/Estimating I</td>
<td>2 2 0 3</td>
<td>BPR 130 or MAT 120, MAT 121, MAT 161, MAT 171, or MAT 175</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>CST 242</td>
<td>Planning/Estimating II</td>
<td>3 2 0 4</td>
<td>CST 241</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>CTS 080</td>
<td>Computing Fundamentals</td>
<td>2 3 0 3</td>
<td>None</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>CTS 112</td>
<td>Windows™</td>
<td>1 2 0 2</td>
<td>None</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>CTS 115</td>
<td>Information Systems Business Concepts</td>
<td>3 0 0 3</td>
<td>CIS 110 or CIS 111 or SGD 111</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>CTS 118</td>
<td>IS Professional Communication</td>
<td>2 0 0 2</td>
<td>None</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

COURSE DESCRIPTIONS

This course provides an opportunity to explore areas of current interest in Computer Programming. Emphasis is placed on subject matter appropriate to computer programming. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

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This course provides an opportunity to explore areas of current interest in Computer Programming. Emphasis is placed on the development of critical listening skills and the presentation of seminar issues. Upon completion, students should be able to critically analyze issues and establish informed opinions.

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This course provides an opportunity to explore areas of current interest in Computer Programming. Emphasis is placed on subject matter appropriate to computer programming. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

This course includes the fundamentals of the Windows™ software. Topics include graphical user interface, icons, directories, file management, accessories, and other applications. Upon completion, students should be able to use Windows™ software in an office environment.

The course introduces the role of IT in managing business processes and the need for business process and IT alignment. Emphasis is placed on industry need for understanding business challenges and developing/managing information systems to contribute to the decision making process based on these challenges. Upon completion, students should be able to demonstrate knowledge of the 'hybrid business manager' and the potential offered by new technology and systems.

This course prepares the information systems professional to communicate with corporate personnel from management to end-users. Topics include information systems cost justification tools, awareness of personal hierarchy of needs, addressing these needs, and discussing technical issues with non-technical personnel. Upon completion, students should be able to communicate information systems issues to technical and non-technical personnel.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTS 120</td>
<td>Hardware/Software Support</td>
<td>2 3 0 3</td>
<td>This course covers the basic hardware of a personal computer, including installation, operations and interactions with software. Topics include component identification, memory-system, peripheral installation and configuration, preventive maintenance, hardware diagnostics/repair, installation and optimization of system software, commercial programs, system configuration, and device-drivers. Upon completion, students should be able to select appropriate computer equipment and software, upgrade/maintain existing equipment and software, and troubleshoot/repair non-functioning personal computers.</td>
</tr>
<tr>
<td>CTS 125</td>
<td>Presentation Graphics</td>
<td>2 2 0 3</td>
<td>This course provides hands-on experience with a graphics presentation package. Topics include terminology, effective chart usage, design and layout, integrating hardware components, and enhancing presentations with text, graphics, audio and video. Upon completion, students should be able to design and demonstrate an effective presentation.</td>
</tr>
<tr>
<td>CTS 130</td>
<td>Spreadsheet</td>
<td>2 2 0 3</td>
<td>This course introduces basic spreadsheet design and development. Topics include writing formulas, using functions, enhancing spreadsheets, creating charts, and printing. Upon completion, students should be able to design and print basic spreadsheets and charts.</td>
</tr>
<tr>
<td>CTS 135</td>
<td>Integrated Software Introduction</td>
<td>2 4 0 4</td>
<td>This course instructs students in the Windows or Linux based program suites for word processing, spreadsheet, database, personal information manager, and presentation software. This course prepares students for introductory level skills in database, spreadsheet, personal information manager, word processing, and presentation applications to utilize data sharing. Upon completion, students should be able to design and integrate data at an introductory level to produce documents using multiple technologies.</td>
</tr>
<tr>
<td>CTS 155</td>
<td>Technical Support Functions</td>
<td>2 2 0 3</td>
<td>This course introduces a variety of diagnostic and instructional tools that are used to evaluate the performance of technical support technologies. Emphasis is placed on technical support management techniques and support technologies. Upon completion, students should be able to determine the best technologies to support and solve actual technical support problems.</td>
</tr>
<tr>
<td>CTS 198</td>
<td>Seminar on Computer Crimes Investigation</td>
<td>2 3 0 3</td>
<td>This course provides an opportunity to explore areas of current interest in computer forensics. Emphasis is placed on standard procedures for obtaining, securing, and managing digital evidence. Upon completion, students should be able to demonstrate how to correctly process digital evidence from the beginning to the end of a case.</td>
</tr>
<tr>
<td>CTS 210</td>
<td>Computer Ethics</td>
<td>3 0 0 3</td>
<td>This course introduces the student to current legal and ethical issues in the computer/engineering field. Topics include moral reasoning, ethical standards, intellectual property, social issues, encryption, software piracy, constitutional issues, and public policy in related matters. Upon completion, students should be able to demonstrate an understanding of the moral and social responsibilities and public policy issues facing an industry.</td>
</tr>
<tr>
<td>CTS 220</td>
<td>Adv Hard/Software Support</td>
<td>2 3 0 3</td>
<td>This course provides advanced knowledge and competencies in hardware and operating system technologies for computer technicians to support personal computers. Emphasis is placed on: configuring and upgrading; diagnosis and troubleshooting; as well as preventive maintenance of hardware and system software. Upon completion, students should be able to install, configure, diagnose, perform preventive maintenance, and maintain basic networking on personal computers.</td>
</tr>
<tr>
<td>CTS 230</td>
<td>Advanced Spreadsheet</td>
<td>2 2 0 3</td>
<td>This course covers advanced spreadsheet design and development. Topics include advanced functions and statistics, charting, macros, databases, and linking. Upon completion, students should be able to demonstrate competence in designing complex spreadsheets.</td>
</tr>
<tr>
<td>CTS 235</td>
<td>Integrated Software Advanced</td>
<td>2 4 0 4</td>
<td>This course provides strategies to perform data transfer among software programs. Emphasis is placed on data interchange among word processors, spreadsheets, presentation graphics, databases and communications products. Upon completion, students should be able to integrate data to produce documents using multiple technologies.</td>
</tr>
<tr>
<td>CTS 240</td>
<td>Project Management</td>
<td>2 2 0 3</td>
<td>This course introduces computerized project management software. Topics include identifying critical paths, cost management, and problem solving. Upon completion, students should be able to plan a complete project and project time and costs accurately.</td>
</tr>
<tr>
<td>CTS 245</td>
<td>Integrated Apps Expert</td>
<td>2 3 0 3</td>
<td>This course provides an emphasis on mastery features in each of the application program areas. Emphasis is placed on end-user skills to achieve advanced support level proficiency by utilizing software for cross-platform integration, automation of processing, and application problem solving. Upon completion, students should be able to demonstrate expert level skills in the utilization of advanced features of the software in the workplace.</td>
</tr>
<tr>
<td>CTS 250</td>
<td>User Support &amp; Software Evaluation</td>
<td>2 2 0 3</td>
<td>This course provides an opportunity to evaluate software and hardware and make recommendations to meet end-user needs.</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
<td>Prerequisites</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------------------</td>
<td>---------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>CTS 255</td>
<td>Advanced Technical Support Functions</td>
<td>2</td>
<td>CTS 155</td>
</tr>
<tr>
<td>CTS 285</td>
<td>Systems Analysis &amp; Design</td>
<td>3</td>
<td>CTS 110 or CTS 111; and ENG 111</td>
</tr>
<tr>
<td>CTS 287</td>
<td>Emerging Technologies</td>
<td>3</td>
<td>CTS 110 or CTS 111; and ENG 111</td>
</tr>
<tr>
<td>CTS 289</td>
<td>System Support Project</td>
<td>3</td>
<td>CTS 285</td>
</tr>
<tr>
<td>CTS 292</td>
<td>Selected Topics: Tech Support Manager</td>
<td>2</td>
<td>None</td>
</tr>
<tr>
<td>CTS 293</td>
<td>Selected Topics in Computer Information Technology: Post Advanced Applications</td>
<td>3</td>
<td>CIS 219</td>
</tr>
<tr>
<td>CTS 297</td>
<td>Seminar in MCOST</td>
<td>3</td>
<td>CIS 110 or CIS 111</td>
</tr>
<tr>
<td>CTS 298</td>
<td>Seminar on Data Recovery Techniques</td>
<td>3</td>
<td>None</td>
</tr>
<tr>
<td>CUL 110</td>
<td>Sanitation and Safety</td>
<td>2</td>
<td>RED 090</td>
</tr>
<tr>
<td>CUL 112</td>
<td>Nutrition for Foodservice</td>
<td>3</td>
<td>CUL 110 and CUL 140</td>
</tr>
<tr>
<td>CUL 120</td>
<td>Purchasing</td>
<td>2</td>
<td>CUL 110Corequisites:CUL 120A and CUL 140</td>
</tr>
<tr>
<td>CUL 120A</td>
<td>Purchasing Lab</td>
<td>1</td>
<td>CUL 110Corequisites:CUL 120 and CUL 140</td>
</tr>
<tr>
<td>CUL 125</td>
<td>Hospitality Information Systems</td>
<td>2</td>
<td>MAT 115, CIS 111, CUL 140</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Units</td>
<td>Prerequisites</td>
</tr>
<tr>
<td>-------------</td>
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</tr>
<tr>
<td>CUL 130</td>
<td>Menu Design</td>
<td>2</td>
<td>RED 090</td>
</tr>
<tr>
<td></td>
<td>Prerequisites: RED 090</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corequisites: None</td>
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</tr>
</tbody>
</table>

This course introduces menu design. Topics include development of standardized recipes, layout, nutritional concerns, product utilization, demographics, and customer needs. Upon completion, students should be able to write, lay out, and produce effective menus for a variety of hospitality settings.

<table>
<thead>
<tr>
<th>CUL 135</th>
<th>Food and Beverage Service</th>
<th>2</th>
<th>MAT 060, RED 090</th>
<th>CUL 135A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prerequisites: MAT 060, RED 090</td>
<td>2</td>
<td></td>
<td>CUL 135A</td>
</tr>
<tr>
<td></td>
<td>Corequisites: CUL 135A</td>
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</tbody>
</table>

This course covers the practical skills and knowledge for effective food and beverage service in a variety of settings. Topics include reservations, greeting and service of guests, styles of service, handling complaints, and sales and merchandising. Upon completion, students should be able to demonstrate competence in human relations and technical skills required in the service of foods and beverages. Concepts and skills studied in this course will be applied in CUL 135A, Food and Beverage Service Lab.

<table>
<thead>
<tr>
<th>CUL 135A</th>
<th>Food and Beverage Service Lab</th>
<th>0</th>
<th>MAT 060, RED 090</th>
<th>CUL 135</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prerequisites: MAT 060, RED 090</td>
<td>0</td>
<td></td>
<td>CUL 135</td>
</tr>
<tr>
<td></td>
<td>Corequisites: CUL 135</td>
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</tbody>
</table>

This course is a laboratory to accompany CUL 135. Emphasis is placed on practical experiences that enhance the materials presented in CUL 135. Upon completion, students should be able to demonstrate practical applications of skills required in the service of foods and beverages.

<table>
<thead>
<tr>
<th>CUL 140</th>
<th>Basic Culinary Skills</th>
<th>2</th>
<th>MAT 060, RED 090, CUL 110</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prerequisites: MAT 060, RED 090, CUL 110</td>
<td>2</td>
<td></td>
<td>None</td>
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<tr>
<td></td>
<td>Corequisites: None</td>
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</tr>
</tbody>
</table>

This course introduces the fundamental concepts, skills, and techniques involved in basic cookery. Emphasis is placed on recipe conversion, measurements, terminology, knife skills, safe food handling, cooking methods, flavorings, seasonings, stocks/sauces/soups, and other related topics. Upon completion, students should be able to exhibit the basic cooking skills used in the food service industry.

<table>
<thead>
<tr>
<th>CUL 142</th>
<th>Fundamentals of Food</th>
<th>2</th>
<th>None</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prerequisites: None</td>
<td>2</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Corequisites: None</td>
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</tr>
</tbody>
</table>

This course introduces the student to the basic principles of cooking, baking and kitchen operations. Topics include protein, starch, vegetable/fruit identification, selection, storages and preparation; breakfast cookery, breads, sweet doughs and pastries, knife/organizational skills, and work coordination. Upon completion, students should be able to execute efficiently a variety of cooking/baking skills as they apply to different stations in kitchen.

<table>
<thead>
<tr>
<th>CUL 160</th>
<th>Baking I</th>
<th>1</th>
<th>CUL 140</th>
<th>None</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Prerequisites: CUL 140</td>
<td></td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Corequisites: None</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

This course covers basic ingredients, weights and measures, baking terminology, and formula calculations. Topics include yeast-raised products, quick breads, pastry dough, various cakes and cookies, and appropriate filling and finishing techniques. Upon completion, students should be able to prepare and evaluate baked products.

<table>
<thead>
<tr>
<th>CUL 170</th>
<th>Garde-Manger I</th>
<th>1</th>
<th>CUL 140</th>
<th>None</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Prerequisites: CUL 140</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Corequisites: None</td>
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</tr>
</tbody>
</table>

This course introduces basic cold food preparation techniques and pantry production. Topics include salads, sandwiches, appetizers, dressings, basic garnishes, cheeses, cold sauces, and related food items. Upon completion, students should be able to lay out a basic cold food display and exhibit an understanding of the cold kitchen and its related terminology.

<table>
<thead>
<tr>
<th>CUL 180</th>
<th>International and American Regional Cuisine</th>
<th>1</th>
<th>CUL 140, COE 112, CUL 160, CUL 170, CUL 240</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prerequisites: CUL 140, COE 112, CUL 160, CUL 170, CUL 240</td>
<td>1</td>
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<td>None</td>
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<tr>
<td></td>
<td>Corequisites: CUL 180</td>
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</tbody>
</table>

This course provides practical experience in the planning, preparation, and service of representative foods from different countries and regions of America. Emphasis is placed on eating habits, indigenous foods and customs, nutritional concerns, and traditional equipment. Upon completion, students should be able to research and execute international and domestic menus.

<table>
<thead>
<tr>
<th>CUL 214</th>
<th>Wine Appreciation</th>
<th>1</th>
<th>RED 090</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prerequisites: RED 090</td>
<td>1</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Corequisites: None</td>
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</tr>
</tbody>
</table>

This course provides comprehensive and detailed information about wine from all the major wine producing countries. Emphasis is placed on the history of wine, production characteristics, laws, and purchasing and storing requirements. Upon completion, students should be able to determine what wines compliment various cuisines and particular tastes. Must be 21 years old or older to take this class.

<table>
<thead>
<tr>
<th>CUL 240</th>
<th>Advanced Culinary Skills</th>
<th>1</th>
<th>CUL 140</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prerequisites: CUL 140</td>
<td>1</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Corequisites: None</td>
<td></td>
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</tbody>
</table>

This course is a continuation of CUL 140. Emphasis is placed on meat fabrication and butchery; vegetable, starch, and protein cookery; compound sauces; plate presentation; breakfast cookery; and quantity food preparation. Upon completion, students should be able to plan, execute, and successfully serve entrees with complementary side items.

<table>
<thead>
<tr>
<th>CUL 250</th>
<th>Classical Cuisine</th>
<th>1</th>
<th>CUL 140, CUL 240, COE 112, CUL 160 and CUL 170</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prerequisites: CUL 140, CUL 240, COE 112, CUL 160 and CUL 170</td>
<td>1</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Corequisites: None</td>
<td></td>
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</tr>
</tbody>
</table>

This course reinforces the classical culinary kitchen as established by Escoffier. Topics include the working Grand Brigade of the kitchen, table d’hôte menus, signature dishes, and classical banquets. Upon completion, students should be able to demonstrate competence in food preparation in a classical/upscale restaurant or banquet setting.

<table>
<thead>
<tr>
<th>CUL 260</th>
<th>Baking II</th>
<th>1</th>
<th>CUL 180</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prerequisites: CUL 180</td>
<td>1</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Corequisites: None</td>
<td></td>
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</tr>
</tbody>
</table>

This course is a continuation of CUL 160. Topics include specialty breads, understanding, development and maintaining of natural sourdough, classical desserts, laminated pastry dough, cake and torte decorating and dessert plating and presentation. Upon completion, students should be able to demonstrate pastry presentation and plating, specialty sourdough production, cake decorating and dessert buffet production skills.

<table>
<thead>
<tr>
<th>CUL 270</th>
<th>Garde-Manger II</th>
<th>1</th>
<th>CUL 170</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Prerequisites: CUL 170</td>
<td>1</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>Corequisites: CUL 240</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This course is a continuation of CUL 170. Topics include pâtés, terrines, galantines, ice and tallow carving, chaud-froid/aspic work, charcuterie, smoking, canapés, hors d’oeuvres, and related food items. Upon completion, students should be able to design, set up, and evaluate a catering function to include a classical cold buffet with appropriate show pieces.
<table>
<thead>
<tr>
<th>Course Title</th>
<th>Hours Per Week</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUL 280 Pastry and Confections</td>
<td>1 4 0 3</td>
<td></td>
</tr>
<tr>
<td>Prerequisites: CUL 160, CUL 260</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corequisites: None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>This course is a continuation of CUL 260. Topics include confections and candy, chocolate tempering and molding, transfer sheets, pulled and blown sugar (basic pulling and ribboning), pastillage, marzipan and custom silicon molding. Upon completion, students will be able to design and produce centerpieces and showpieces made from tempered chocolate, pulled sugar, pastillage and marzipan, as produced through custom molding, pre-set molding, stencil cut-outs, pattern tracing and/or free-hand shaping.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| DBA 110 Database Concepts                | 2 3 0 3        |        |
| Prerequisites: None                      |                |        |
| Corequisites: None                       |                |        |
| This course introduces database design and creation using a DBMS product. Emphasis is placed on data dictionaries, normalization, data integrity, data modeling, and creation of simple tables, queries, reports, and forms. Upon completion, students should be able to design and implement normalized database structures by creating simple database tables, queries, reports, and forms. | | |

| DBA 112 Database Utilization             | 2 2 0 3        |        |
| Prerequisites: CIS 110 or CIS 111 or OST 137 |        |        |
| Corequisites: None                       |                |        |
| This course introduces basic database functions and uses. Emphasis is placed on database manipulation with queries, reports, forms, and some table creation. Upon completion, students should be able to enter and manipulate data from the end user mode. | | |

| DBA 115 Database Applications            | 2 2 0 3        |        |
| Prerequisites: DBA 110                   |                |        |
| Corequisites: None                       |                |        |
| This course applies concepts learned in DBA 110 to a specific DBMS. Topics include manipulating multiple tables, advanced queries, screens and reports, linking, and command files. Upon completion, students should be able to create multiple table systems that demonstrate updates, screens, and reports representative of industry requirements. | | |

| DBA 120 Database Programming I           | 2 2 0 3        |        |
| Prerequisites: None                      |                |        |
| Corequisites: None                       |                |        |
| This course is designed to develop SQL programming proficiency. Emphasis is placed on data definition, data manipulation, and data control statements as well as on report generation. Upon completion, students should be able to write programs which create, update, and produce reports. | | |

| DBA 192 Selected Topics in Database Management: Oracle Internet Application | 1 2 0 2        |        |
| Prerequisites: DBA 120, DBA 240          |                |        |
| Corequisites: None                       |                |        |
| This course provides an opportunity to explore areas of current interest in Oracle internet applications. Emphasis is placed on subject matter appropriate to computer programming. Upon completion, students should be able to demonstrate an understanding of the specific area of study. | | |

| DBA 193 Selected Topics in Database Management: Oracle Optimization | 2 2 0 3        |        |
| Prerequisites: DBA 230, DBA 260          |                |        |
| Corequisites: None                       |                |        |
| This course provides an opportunity to explore areas of current interest in Oracle optimization. Emphasis is placed on subject matter appropriate to computer programming. Upon completion, students should be able to demonstrate an understanding of the specific area of study. | | |

| DBA 210 Database Administration           | 2 3 0 3        |        |
| Prerequisites: None                       |                |        |
| Corequisites: None                       |                |        |
| This course covers database administration issues and distributed database concepts. Topics include: database administrator (DBA) goals and functions, backup and recovery, standards and procedures, training, and database security and performance evaluations. Upon completion, students should be able to produce functional DBA documentation and administer a database. | | |

| DBA 220 Oracle DB Programming II          | 2 2 0 3        |        |
| Prerequisites: DBA 120 and CIS 157       |                |        |
| Corequisites: None                       |                |        |
| This course is designed to enhance programming skills developed in DBA 120. Topics include application development with GUI front-ends and embedded programming. Upon completion, students should be able to develop an Oracle DBMS application which includes a GUI front-end and report generation. | | |

| DBA 221 SQL Server DB Programming II      | 2 2 0 3        |        |
| Prerequisites: DBA 120                   |                |        |
| Corequisites: None                       |                |        |
| This course is designed to enhance programming skills developed in DBA 120. Topics include application development with GUI front-ends and embedded programming. Upon completion, students should be able to develop a SQL Server DBMS application which includes a GUI front-end and report generation. | | |

| DBA 222 DB2 DB Programming II             | 2 2 0 3        |        |
| Prerequisites: DBA 120                   |                |        |
| Corequisites: None                       |                |        |
| This course is designed to enhance programming skills developed in DBA 120. Topics include application development with GUI front-ends and embedded programming. Upon completion, students should be able to develop a DB2 DBMS application which includes a GUI front-end and report generation. | | |

| DBA 223 MySQL DB Programming II           | 2 2 0 3        |        |
| Prerequisites: DBA 120                   |                |        |
| Corequisites: None                       |                |        |
| This course is designed to enhance programming skills developed in DBA 120. Topics include application development with GUI front-ends and embedded programming. Upon completion, students should be able to develop a MySQL DBMS application which includes a GUI front-end and report generation. | | |

| DBA 224 SAS DB Programming II             | 2 2 0 3        |        |
| Prerequisites: DBA 120                   |                |        |
| Corequisites: None                       |                |        |
| This course is designed to enhance programming skills developed in DBA 120. Topics include application development with GUI | | |
front-ends and embedded programming. Upon completion, students should be able to develop a SAS DBMS application which includes a GUI front-end and report generation.

DBA 230 Database in Corporate Environments 3 0 0 3
Prerequisites: None
Corequisites: None
This course covers database systems as they relate to the corporate environment. Topics include knowledge-based, decision-support, and expert systems; database choices; data warehousing; and corporate structure. Upon completion, students should be able to analyze and recommend database systems needed by a corporation.

DBA 240 Database Analysis/Design 2 3 0 3
Prerequisites: None
Corequisites: None
This course is an exploration of the established and evolving methodologies for the analysis, design, and development of a database system. Emphasis is placed on business data characteristics and usage, managing database projects, prototyping and modeling, and CASE tools. Upon completion, students should be able to analyze, develop, and validate a database implementation plan.

DBA 260 Oracle DBMS Administration 2 2 0 3
Prerequisites: None
Corequisites: None
This course examines advanced Oracle database administration issues and distributed database concepts. Topics include backup and recovery, transporting of data between databases, database networking concepts, and resolution of database networking issues. Upon completion, students should be able to manage backup recovery and implement networked database solutions.

DBA 261 SQL Server DBMS Administration 2 2 0 3
Prerequisites: None
Corequisites: None
This course examines advanced SQL Server database administration issues and distributed database concepts. Topics include backup and recovery, transporting of data between databases, database networking concepts, and resolution of database networking issues. Upon completion, students should be able to manage backup recovery and implement networked database solutions.

DBA 262 DB2 DBMS Administration 2 2 0 3
Prerequisites: None
Corequisites: None
This course examines advanced DB2 database administration issues and distributed database concepts. Topics include backup and recovery, transporting of data between databases, database networking concepts, and resolution of database networking issues. Upon completion, students should be able to manage backup recovery and implement networked database solutions.

DBA 263 MySQL DBMS Administration 2 2 0 3
Prerequisites: None
Corequisites: None
This course examines advanced MySQL database administration issues and distributed database concepts. Topics include backup and recovery, transporting of data between databases, database networking concepts, and resolution of database networking issues. Upon completion, students should be able to manage backup recovery and implement networked database solutions.

DBA 264 SAS DBMS Administration 2 2 0 3
Prerequisites: None
Corequisites: None
This course examines advanced SAS database administration issues and distributed database concepts. Topics include backup and recovery, transporting of data between databases, database networking concepts, and resolution of database networking issues. Upon completion, students should be able to manage backup recovery and implement networked database solutions.

DBA 270 Oracle Performance Tuning 2 2 0 3
Prerequisites: NOS 130
Corequisites: None
This course covers Oracle performance tuning concepts and techniques. Topics include database tuning and Oracle performance tools. Upon completion, students should be able to configure and diagnose an Oracle database for optimal performance.

DBA 271 SQL Server Performance Tuning 2 2 0 3
Prerequisites: NOS 130
Corequisites: None
This course covers SQL Server performance tuning concepts and techniques. Topics include database tuning and SQL Server performance tools. Upon completion, students should be able to configure and diagnose an SQL Server database for optimal performance.

DBA 272 DB2 Performance Tuning 2 2 0 3
Prerequisites: NOS 130
Corequisites: None
This course covers DB2 performance tuning concepts and techniques. Topics include database tuning and DB2 performance tools. Upon completion, students should be able to configure and diagnose a DB2 database for optimal performance.

DBA 273 MySQL Performance Tuning 2 2 0 3
Prerequisites: NOS 130
Corequisites: None
This course covers MySQL performance tuning concepts and techniques. Topics include database tuning and MySQL performance tools. Upon completion, students should be able to configure and diagnose a MySQL database for optimal performance.

DBA 274 SAS Performance Tuning 2 2 0 3
Prerequisites: NOS 130
Corequisites: None
This course covers SAS performance tuning concepts and techniques. Topics include database tuning and SAS performance tools. Upon completion, students should be able to configure and diagnose a SAS database for optimal performance.

DBA 285 Data Warehousing & Mining 2 3 0 3
Prerequisites: NOS 130
Corequisites: None
This course introduces data warehousing and data mining techniques. Emphasis is placed on data warehouse design, data transference, data cleansing, retrieval algorithms, and mining techniques. Upon completion, students should be able to create, populate, and mine a data warehouse.
### COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBA 289</td>
<td>Database Project</td>
<td>1 4 0 3</td>
<td>DBA 240 and DBA 120</td>
<td></td>
</tr>
<tr>
<td>DDT 220</td>
<td>Program Planning Process</td>
<td>3 0 0 3</td>
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<tr>
<td>DEN 100</td>
<td>Basic Orofacial Anatomy</td>
<td>2 0 0 2</td>
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<td>DDF 211</td>
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<tr>
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<td>DEN 104</td>
<td>Dental Health Education</td>
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### DBA 289 Database Project
**Prerequisites:** DBA 240 and DBA 120
**Corequisites:** None
This course provides an opportunity to complete a significant database systems project with minimal instructor support. Emphasis is placed on written and verbal communication skills, documentation, presentation, and user training. Upon completion, students should be able to present an operational database system which they have created.

### DDT 220 Program Planning Process
**Prerequisites:** None
**Corequisites:** None
This course covers the individual program planning process used in services for people with developmental disabilities. Topics include basic components and benefits of the process, the effect of values on outcomes, and group problem-solving methods. Upon completion, students should be able to demonstrate an understanding of effective group process in program planning and the individual roles of team members.

### DEN 100 Basic Orofacial Anatomy
**Prerequisites:** None
**Corequisites:** None
This course provides a basic introduction to the structures of the head, neck, and oral cavity. Topics include tooth morphology, head and neck anatomy, histology, and embryology. Upon completion, students should be able to demonstrate knowledge of normal structures and development and how they relate to the practice of dental assisting.

### DDF 211 Design Drafting I
**Prerequisites:** None
**Corequisites:** None
This course emphasizes design processes for finished products. Topics include data collection from manuals and handbooks, efficient use of materials, design sketching, specifications, and vendor selection. Upon completion, students should be able to research and plan the design process for a finished product.

### DDD 221 Design Drafting Project
**Prerequisites:** None
**Corequisites:** None
This course incorporates ideas from concept to final design. Topics include reverse engineering, design for manufacturability, and mock-up construction. Upon completion, students should be able to generate working drawings and models based on physical design parameters.

### DDT 110 Developmental Disabilities
**Prerequisites:** None
**Corequisites:** None
This course identifies the characteristics and causes of various disabilities. Topics include history of service provision, human rights, legislation and litigation, advocacy, and accessing support services. Upon completion, students should be able to demonstrate an understanding of current and historical developmental disability definitions and support systems used throughout the life span.

### DDT 120 Teaching the Developmentally Disabled
**Prerequisites:** DDT 110
**Corequisites:** None
This course covers teaching modalities which enhance learning among people with developmental disabilities. Topics include assessment, support strategies, writing behavioral strategies, teaching methods, and documentation. Upon completion, students should be able to demonstrate competence in individual program plan development and implementation.

### DDT 210 DDT Health Issues
**Prerequisites:** DDT 110
**Corequisites:** None
This course introduces the health and medical aspects of assisting people with developmental disabilities. Topics include universal precautions, medication, wellness, nutrition, human sexuality, and accessing medical services. Upon completion, students should be able to identify and implement strategies to promote wellness and manage chronic health conditions. Upon completion, students should be able to identify and implement strategies for the maintenance, prevention, and treatment of predominant health conditions affecting the developmentally disabled.
and patient education theory and practice. Upon completion, students should be able to demonstrate proficiency in patient counseling and oral health instruction in private practice or public health settings.

**DEN 105 Practice Management**

Prerequisites: None
Corequisites: None

This course provides a study of principles and procedures related to management of the dental practice. Emphasis is placed on maintaining clinical and financial records, patient scheduling, and supply and inventory control. Upon completion, students should be able to demonstrate fundamental skills in dental practice management.

**DEN 106 Clinical Practice I**

Prerequisites: DEN 101, DEN 111
Corequisites: DEN 102, DEN 104, DEN 112

This course is designed to provide experience assisting in a clinical setting. Emphasis is placed on the application of principles and procedures of four-handed dentistry and laboratory and clinical support functions. Upon completion, students should be able to utilize classroom theory and laboratory and clinical skills in a dental setting.

**DEN 107 Clinical Practice II**

Prerequisites: DEN 106
Corequisites: None

This course is designed to increase the level of proficiency in assisting in a clinical setting. Emphasis is placed on the application of principles and procedures of four-handed dentistry and laboratory and clinical support functions. Upon completion, students should be able to combine theoretical and ethical principles necessary to perform entry-level skills including functions delegable to a DA II.

**DEN 110 Orofacial Anatomy**

Prerequisites: None
Corequisites: None

This course introduces the structures of the head, neck, and oral cavity. Topics include tooth morphology, head and neck anatomy, histology, and embryology. Upon completion, students should be able to relate the identification of normal structures and development to the practice of dental assisting and dental hygiene.

**DEN 111 Infection/Hazard Control**

Prerequisites: None
Corequisites: None

This course introduces the infection and hazard control procedures necessary for the safe practice of dentistry. Topics include microbiology, practical infection control, sterilization and monitoring, chemical disinfectants, aseptic technique, infectious diseases, OSHA standards, and applicable North Carolina laws. Upon completion, students should be able to understand infectious diseases, disease transmission, infection control procedures, biohazard management, OSHA standards, and applicable North Carolina laws.

**DEN 112 Dental Radiography**

Prerequisites: None
Corequisites: None

This course provides a comprehensive view of the principles and procedures of radiology as they apply to dentistry. Topics include techniques in exposing, processing, and evaluating radiographs, as well as radiation safety, quality assurance, and legal issues. Upon completion, students should be able to demonstrate proficiency in the production of diagnostically acceptable radiographs using appropriate safety precautions.

**DEN 120 Dental Hygiene Preclinical Lecture**

Prerequisites: None
Corequisites: DEN 121

This course introduces preoperative and clinical dental hygiene concepts. Emphasis is placed on the assessment phase of patient care as well as the theory of basic dental hygiene instrumentation. Upon completion, students should be able to collect and evaluate patient data at a basic level and demonstrate knowledge of dental hygiene instrumentation.

**DEN 121 Dental Hygiene Preclinical Lab**

Prerequisites: None
Corequisites: DEN 120

This course provides the opportunity to perform clinical dental hygiene procedures discussed in DEN 120. Emphasis is placed on clinical skills in patient assessment and instrumentation techniques. Upon completion, students should be able to demonstrate the ability to perform specific preclinical procedures.

**DEN 123 Nutrition/Dental Health**

Prerequisites: None
Corequisites: None

This course introduces basic principles of nutrition with emphasis on nutritional requirements and their application to individual patient needs. Topics include the study of the food pyramid, nutrient functions, Recommended Daily Allowances, and related psychological principles. Upon completion, students should be able to recommend and counsel individuals on their food intake as related to their dental health.

**DEN 124 Periodontology**

Prerequisites: DEN 110
Corequisites: None

This course provides an in-depth study of the periodontium, periodontal pathology, periodontal monitoring, and the principles of periodontal therapy. Topics include periodontal anatomy and a study of the etiology, classification, and treatment modalities of periodontal diseases. Upon completion, students should be able to describe, compare, and contrast techniques involved in periodontal/maintenance therapy, as well as patient care management.

**DEN 125 Dental Office Emergencies**

Prerequisites: None
Corequisites: None

This course provides a study of the management of dental office emergencies. Topics include methods of prevention, necessary equipment/drugs, medicolega considerations, recognition and effective initial management of a variety of emergencies. Upon completion, the student should be able to recognize, assess and manage various dental office emergencies and activate advanced medical support when indicated.

**DEN 130 Dental Hygiene Theory I**

Prerequisites: DEN 120
Corequisites: DEN 131

This course is a continuation of the didactic dental hygiene concepts necessary for providing an oral prophylaxis. Topics include deposits/removal, instrument sharpening, patient education, fluorides, planning for dental hygiene treatment, charting, and clinical records and procedures. Upon completion, students should be able to demonstrate knowledge needed to complete a thorough oral prophylaxis.
DEN 131 Dental Hygiene
Clinic I
Prerequisites: DEN 121
Corequisites: DEN 130
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of the recall patients with gingivitis or light deposits. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.

DEN 140 Dental Hygiene
Theory II
1 0 0 1
Prerequisites: DEN 130
Corequisites: DEN 141
This course provides a continuation of the development, theory, and practice of patient care. Topics include modification of treatment for special needs patients, advanced radiographic interpretation, and ergonomics. Upon completion, students should be able to differentiate necessary treatment modifications, effective ergonomic principles, and radiographic abnormalities.

DEN 141 Dental Hygiene
Clinic II
0 0 6 2
Prerequisites: DEN 131
Corequisites: DEN 140
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of patients with early periodontal disease and subgingival deposits. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.

DEN 220 Dental Hygiene
Theory III
2 0 0 2
Prerequisites: DEN 140
Corequisites: DEN 221
This course provides a continuation in developing the theories and practices of patient care. Topics include periodontal debridement, pain control, subgingival irrigation, air polishing, and case presentations. Upon completion, students should be able to demonstrate knowledge of methods of treatment and management of periodontally compromised patients.

DEN 221 Dental Hygiene
Clinic III
0 0 12 4
Prerequisites: DEN 141
Corequisites: DEN 220
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on treatment of patients with moderate to advanced periodontal involvement and moderate deposits. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.

DEN 222 General and Oral Pathology
2 0 0 2
Prerequisites: BIO 163 or BIO 165 or BIO 168
Corequisites: None
This course provides a general knowledge of oral pathological manifestations associated with selected systemic and oral diseases. Topics include developmental and degenerative diseases, selected microbial diseases, specific and nonspecific immune and inflammatory responses with emphasis on recognizing abnormalities. Upon completion, students should be able to differentiate between normal and abnormal tissues and refer unusual findings to the dentist for diagnosis.

DEN 223 Dental Pharmacology
2 0 0 2
Prerequisites: None
Corequisites: BIO 163 or BIO 165 or BIO 168
This course provides basic drug terminology, general principles of drug actions, dosages, routes of administration, adverse reactions, and basic principles of anesthesiology. Emphasis is placed on knowledge of drugs in overall understanding of patient histories and health status. Upon completion, students should be able to recognize that each patient's general health or drug usage may require modification of the treatment procedures.

DEN 224 Materials and Procedures
1 3 0 2
Prerequisites: DEN 111
Corequisites: None
This course introduces the physical properties of materials and related procedures used in dentistry. Topics include restorative and preventive materials, fabrication of casts and appliances, and chairside functions of the dental hygienist. Upon completion, students should be able to demonstrate proficiency in the laboratory and/or clinical application of routinely used dental materials and chairside functions.

DEN 230 Dental Hygiene
Theory IV
1 0 0 1
Prerequisites: DEN 220
Corequisites: DEN 231
This course provides an opportunity to increase knowledge of the profession. Emphasis is placed on dental specialties and completion of a case presentation. Upon completion, students should be able to demonstrate knowledge of various disciplines of dentistry and principles of case presentations.

DEN 231 Dental Hygiene
Clinic IV
0 0 12 4
Prerequisites: DEN 221
Corequisites: DEN 230
This course continues skill development in providing an oral prophylaxis. Emphasis is placed on periodontal maintenance and on treating patients with moderate to advanced/refractory periodontal disease. Upon completion, students should be able to assess these patients' needs and complete the necessary dental hygiene treatment.

DEN 232 Community Dental Health
2 0 3 3
Prerequisites: None
Corequisites: None
This course provides a study of the principles and methods used in assessing, planning, implementing, and evaluating community dental health programs. Topics include epidemiology, research methodology, biostatistics, preventive dental care, dental health education, program planning, and financing and utilization of dental services. Upon completion, students should be able to assess, plan, implement, and evaluate a community dental health program.

DEN 233 Professional Development
2 0 0 2
Prerequisites: None
Corequisites: None
This course includes professional development, ethics, and jurisprudence with applications to practice management. Topics include conflict management, state laws, résumés, interviews, and legal liabilities as health care professionals. Upon completion, students should be able to demonstrate the ability to practice dental hygiene within established ethical standards and state laws.
### COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Units</th>
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<tbody>
<tr>
<td>DFT 110</td>
<td>Basic Drafting</td>
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<td></td>
<td>This course introduces basic drafting skills, terminology, and applications. Topics include basic mathematics, sketching, introduction to CAD, ANSI and ISO drafting standards, and a survey of various drafting applications. Upon completion, students should be able to perform basic calculations for CAD drafting, sketch drawings using appropriate standards, and recognize drawings from different fields. This course is an introductory course utilizing AutoCAD software.</td>
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| DFT 111     | Technical Drafting I          | 1       | 3     | None          | DFT 111      |
|             | This course introduces basic drafting skills, equipment, and applications. Topics include sketching, measurements, lettering, dimensioning, geometric construction, orthographic projections and pictorials drawings, sections, and auxiliary views. Upon completion, students should be able to understand and apply basic drawing principles and practices. |

| DFT 111A    | Technical Drafting I Lab      | 0       | 3     | None          | DFT 111      |
|             | This course provides a laboratory setting to enhance basic drafting skills. Emphasis is placed on practical experiences that enhance the topics presented in DFT 111. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in DFT 111. |

| DFT 112     | Technical Drafting II         | 1       | 3     | DFT 111       | None         |
|             | This course provides for advanced drafting practices and procedures. Topics include detailed working drawings, hardware, fits and tolerances, assembly and sub-assembly, geometric dimensioning and tolerancing, intersections, and developments. Upon completion, students should be able to produce detailed working drawings. |

| DFT 112A    | Technical Drafting II Lab     | 0       | 3     | None          | DFT 112      |
|             | This course provides a laboratory setting to enhance advanced drafting skills. Emphasis is placed on practical experiences that enhance the topics presented in DFT 112. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in DFT 112. |

| DFT 115     | Architectural Drafting        | 1       | 2     | None          | None         |
|             | This course introduces basic drafting practices used in residential and light commercial design. Topics include floor plans, foundations, details, electrical components, elevations, and dimensioning practice. Upon completion, students should be able to complete a set of working drawings for a simple structure. |

| DFT 119     | Basic CAD                     | 1       | 2     | None          | None         |
|             | This course introduces computer-aided drafting software for specific technologies to non-drafting majors. Emphasis is placed on understanding the software command structure and drafting standards for specific technical fields. Upon completion, students should be able to create and plot basic drawings. This course utilizes MicroStation software. |

| DFT 120     | Advanced CAD                  | 1       | 2     | DFT 119       | None         |
|             | This course is designed for non-drafting majors to build upon basic computer-aided drafting skills by the use of application-specific assignments. Emphasis is placed on advanced 2D, 3D, isometric, and modeling applications via the CAD system. Upon completion, students should be able to generate, manage, and output engineering drawings via the computer, printer, and plotter. This course utilizes GEOPAK software. |

| DFT 121     | Introduction to GD and T      | 1       | 2     | None          | None         |
|             | This course introduces basic geometric dimensioning and tolerancing principles. Topics include symbols, annotation, theory, and applications. Upon completion, students should be able to interpret and apply basic geometric dimensioning and tolerancing principles to drawings. |

| DFT 151     | CAD I                         | 2       | 3     | None          | None         |
|             | This course introduces CAD software as a drawing tool. Topics include drawing, editing, file management, and plotting. Upon completion, students should be able to produce and plot a CAD drawing. |

| DFT 152     | CAD II                        | 2       | 3     | DFT 110, DFT 151, or permission of the instructor | None         |
|             | This course introduces extended CAD applications. Emphasis is placed upon intermediate applications of CAD skills. Upon completion, students should be able to use extended CAD applications to generate and manage drawings. |

| DFT 153     | CAD III                       | 2       | 3     | DFT 110, DFT 151, or permission of the instructor | None         |
|             | This course introduces advanced CAD applications. Emphasis is placed upon advanced applications of CAD skills. Upon completion, students should be able to use advanced CAD applications to generate and manage data. |

| DFT 154     | Introduction to Solid Models/Rendering | 2 | 3 | DFT 111 or DFT 170 | None |
|             | This course covers basic principles of three-dimensional CAD wireframe and surface models. Topics include user coordinate systems, three-dimensional viewpoints, three-dimensional wireframes, and surface components and viewpoints. Upon completion, students should be able to create and manipulate three-dimensional wireframe and surface models. This course is advanced solid modeling using ProE software. |

| DFT 161     | Pattern Design and Layout     | 1       | 2     | None          | DFT 151      |
|             | This course covers the layout of sheet metal and pipe fittings. Topics include the development of patterns and templates for metalworking industries. Upon completion, students should be able to develop, sketch, produce, and angle layouts. |
COURSE DESCRIPTIONS

DFT 170 Engineering Graphics  2 2 0 3
Prerequisites:  None
Corequisites:  None
This course introduces basic engineering graphics skills, equipment, and applications (manual and computer-aided). Topics include sketching, measurements, lettering, dimensioning, geometric construction, orthographic projections and pictorial drawings, and sectional and auxiliary views. Upon completion, students should be able to demonstrate an understanding of basic engineering graphics principles and practices. This course utilizes Solidworks software.

DFT 214 Descriptive Geometry  1 2 0 2
Prerequisites:  DFT 111, DFT 111A
Corequisites:  None
This course includes a graphic analysis of space problems. Topics include points, lines, planes, connectors, and combinations of these. Upon completion, students should be able to solve real world spatial problems using descriptive geometry techniques.

DFT 221 Electrical Drafting  2 6 0 4
Prerequisites:  DFT 111, DFT 111A, DFT 151
Corequisites:  None
This course covers the practices used for making electrical drawings. Emphasis is placed on symbol identification and various types of electrical diagrams. Upon completion, students should be able to properly utilize electrical symbols in the construction of various electrical diagrams.

DFT 231 Jig & Fixture Design  1 2 0 2
Prerequisites:  None
Corequisites:  None
This course introduces the study of jigs and fixtures. Topics include different types, components, and uses of jigs and fixtures. Upon completion, students should be able to analyze, design, and complete a set of working drawings for a jig or fixture.

DFT 254 Intermediate Solid Models/Rendering  2 3 0 3
Prerequisites:  DFT 154
Corequisites:  None
This course presents a continuation of basic three-dimensional solid modeling and design software. Topics include advanced study of parametric design, creation, editing, rendering and analysis of solid model assemblies, and multiview drawing generation. Upon completion, students should be able to use parametric design techniques to create and analyze the engineering design properties of a model assembly.

DRA 111 Theatre Appreciation  3 0 0 3
Prerequisites:  ENG 090, RED 090
Corequisites:  None
This course provides a study of the art, craft, and business of the theatre. Emphasis is placed on the audience's appreciation of the work of the playwright, director, actor, designer, producer, and critic. Upon completion, students should be able to demonstrate a vocabulary of theatre terms and to recognize the contributions of various theatre artists.

DRA 112 Literature of the Theatre  3 0 0 3
Prerequisites:  ENG 090, RED 090
Corequisites:  None
This course provides a survey of dramatic works from the classical Greek through the present. Emphasis is placed on the language of drama, critical theory, and background as well as on play reading and analysis. Upon completion, students should be able to articulate, orally and in writing, their appreciation and understanding of dramatic works.

DRA 115 Theatre Criticism  3 0 0 3
Prerequisites:  DRA 111
Corequisites:  None
This course is designed to develop a critical appreciation of the theatre from the viewpoint of the audience/consumer. Emphasis is placed on viewing, discussing, and evaluating selected theatre performance, either live or on film/video. Upon completion, students should be able to express their critical judgments both orally and in writing.

DRA 120 Voice for Performance  3 0 0 3
Prerequisites:  None
Corequisites:  None
This course provides guided practice in the proper production of speech for the theatre. Emphasis is placed on improving speech, including breathing, articulation, pronunciation, and other vocal variables. Upon completion, students should be able to demonstrate effective theatrical speech.

DRA 122 Oral Interpretation  3 0 0 3
Prerequisites:  None
Corequisites:  None
This course introduces the dramatistic study of literature through performance. Emphasis is placed on analysis and performance of poetry, drama, and prose fiction. Upon completion, students should be able to embody and discuss critically the speakers inherent in literature.

DRA 124 Readers Theatre  3 0 0 3
Prerequisites:  None
Corequisites:  None
This course provides a theoretical and applied introduction to the medium of readers’ theatre. Emphasis is placed on the group performance considerations posed by various genres of literature. Upon completion, students should be able to adapt and present a literary script following the conventions of readers’ theatre.

DRA 126 Storytelling  3 0 0 3
Prerequisites:  None
Corequisites:  None
This course introduces the art of storytelling and the oral traditions of folk literature. Topics include the history of storytelling, its value and purpose, techniques of the storyteller, and methods of collecting verbal art. Upon completion, students should be able to present and discuss critically stories from the world’s repertory of traditional lore.

DRA 128 Children’s Theatre  3 0 0 3
Prerequisites:  None
Corequisites:  None
This course introduces the philosophy and practice involved in producing plays for young audiences. Topics include the selection of age-appropriate scripts and the special demands placed on directors, actors, designers, and educators in meeting the needs of young audiences. Upon completion, students should be able to present and critically discuss productions for children.

DRA 130 Acting I  0 6 0 3
Prerequisites:  None
Corequisites:  None
This course provides an applied study of the actor’s craft. Topics include role analysis, training the voice, and body concentration, discipline, and self-evaluation. Upon completion, students should be able to explore their creativity in an acting ensemble.
# COURSE DESCRIPTIONS

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### COURSE DESCRIPTIONS

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<tr>
<td>This course introduces basic concepts of micro- and macroeconomics. Topics include supply and demand, optimizing economic behavior, costs and revenue, market structures, factor markets, income distribution, market failure, and government intervention. Upon completion, students should be able to describe appropriate relationships with parents/caretakers, center/school colleagues, and community agencies that enhance the educational experiences/well-being of all children. This course is also available through the Virtual Learning Community (VLC).</td>
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<td>ECO 252 Principles of Macroeconomics</td>
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<td>This course introduces economic analysis of individual, business, and industry choices in the market economy. Topics include the price mechanism, supply and demand, optimizing economic behavior, costs and revenue, market structures, factor markets, income distribution, market failure, and government intervention. Upon completion, students should be able to identify and evaluate consumer and business alternatives in order to efficiently achieve economic objectives.</td>
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<tr>
<td>This course introduces basic concepts of micro- and macroeconomics. Topics include supply and demand, optimizing economic behavior, prices and wages, money, interest rates, banking system, unemployment, inflation, taxes, government spending, and international trade. Upon completion, students should be able to explain alternative solutions for economic problems faced by private and government sectors.</td>
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<td>This course introduces economic analysis of individual, business, and industry choices in the market economy. Topics include the price mechanism, supply and demand, optimizing economic behavior, costs and revenue, market structures, factor markets, income distribution, market failure, and government intervention. Upon completion, students should be able to identify and evaluate consumer and business alternatives in order to efficiently achieve economic objectives.</td>
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<tr>
<td>ECO 160 Principles of Macroeconomics</td>
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<td>ECO 220 Electronic Commerce Planning and Implementation</td>
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<td>This course builds on currently accepted business practices to develop a business plan and implementation model for Electronic Commerce. Topics include analysis and synthesis of the planning cycle, cost/benefit analysis, technical systems, marketing, security, financial support, Internet strategies, website design, customer support and feedback and assessment. Upon completion, students should be able to develop a plan for Electronic Commerce in a small to medium size business. This course is a unique concentration requirement of the E-Commerce concentration in the Business Administration program. This course is also available through the Virtual Learning Community (VLC).</td>
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<td>This course provides experience in Electronic Commerce. Emphasis is placed on the implementation of an Electronic Commerce model for an existing business. Upon completion, students should be able to successfully develop and implement a plan for Electronic Commerce in a small to medium size business.</td>
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<td>ECU 113 Family/Early Child Credentials</td>
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<td>Corequisites: None</td>
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<td>This course covers business/professional practices for family early childhood providers, developmentally appropriate practices, positive guidance, and methods of providing a safe and healthy environment. Topics include developmentally appropriate practices; health, safety and nutrition; and business and professionalism. Upon completion, students should be able to develop a handbook of policies, procedures, and practices for a family child care home.</td>
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<td>Corequisites: None</td>
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<td>This course covers the foundations of the education profession, the diverse educational settings for young children, professionalism and planning developmentally appropriate programs for children. Topics include historical foundations, program types, career options, professionalism, and creating inclusive environments and curriculum that are responsive to the needs of children and families. Upon completion, students should be able design career plans and develop appropriate schedules, environments and activity plans while incorporating adaptations for children with exceptionalities. This course is also available through the Virtual Learning Community (VLC).</td>
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# COURSE DESCRIPTIONS

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tr>
<td><strong>EDU 144</strong></td>
<td>Child Development I</td>
<td>3</td>
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<td>This course covers the theories of child development, developmental sequences, and factors that influence children’s development, from conception through pre-school for all children. Emphasis is placed on sequences in physical/motor, social, emotional, cognitive, and language development and the multiple influences on development and learning of the whole child. Upon completion, students should be able to identify typical and atypical developmental characteristics, plan experiences to enhance development, and describe appropriate interaction techniques and environments. <strong>This course is also available through the Virtual Learning Community (VLC).</strong></td>
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| **EDU 145** | Child Development II                             | 3     | EDU 144                                          | None                                              |
|             | This course covers theories of child development and developmental sequences of children from pre-school through middle childhood for early childhood educators. Emphasis is placed on characteristics of physical/motor, social, emotional, and cognitive/language development and appropriate experiences for children. Upon completion, students should be able to identify developmental characteristics, plan experiences to enhance development, and describe appropriate interaction techniques and environments. |

| **EDU 146** | Child Guidance                                   | 3     | EDU 144 or EDU 119                               | None                                              |
|             | This course introduces practical principles and techniques for providing developmentally appropriate guidance for all children with and without disabilities, including those at risk. Emphasis is placed on encouraging self-esteem, cultural awareness, effective communication skills, direct/indirect techniques/strategies and observation to understand the underlying causes of behavior. Upon completion, students should be able to demonstrate appropriate interactions with children and families and promote conflict resolution, self-control, self-motivation, and self-esteem in children. **This course is also available through the Virtual Learning Community (VLC).** |

| **EDU 151** | Creative Activities                              | 3     | EDU 119, EDU 144, EDU 145, EDU 146, EDU 157, ENG 111 | None                                              |
|             | This course covers planning, creation and adaptation of developmentally supportive learning environments with attention to curriculum, interactions, teaching practices and learning materials. Emphasis is placed on creating and adapting integrated, meaningful, challenging and engaging developmentally supportive learning experiences in art, music, movement and physical skills, and dramatics. Upon completion, students should be able to create, manage, adapt and evaluate developmentally supportive learning materials, experiences and environments. |

| **EDU 152** | Music, Movement, and Language                    | 3     | EDU 151, EDU 185 and ENG 112                     | None                                              |
|             | This course introduces a historical perspective of music and movement and integrates the whole language concept with emphasis on diversity. Emphasis is placed on designing an environment that emphasizes language development through developmentally and culturally appropriate music and movement. Upon completion, students should be able to design an environment that develops language through a music and movement curriculum that emphasizes diversity. |

| **EDU 153** | Health, Safety, and Nutrition                    | 3     | None                                             | None                                              |
|             | This course focuses on promoting and maintaining the health and well-being of all children. Topics include health and nutritional guidelines, common childhood illnesses, maintaining safe and healthy learning environments, recognizing and reporting of abuse and neglect and state regulations. Upon completion, students should be able to demonstrate knowledge of health, safety, and nutritional needs, implement safe learning environments, and adhere to state regulations. **This course is also available through the Virtual Learning Community (VLC).** |

| **EDU 157** | Active Play                                      | 2     | None                                             | None                                              |
|             | This course introduces the use of indoor and outdoor physical activities to promote the physical, cognitive, and social/emotional development of children. Topics include the role of active play, development of play skills, playground design, selection of safe equipment, and materials and surfacing for active play. Upon completion, students should be able to discuss the stages of play, the role of teachers in play, and the design of appropriate active play areas and activities. |

| **EDU 185** | Cognitive and Language Activities                | 3     | EDU 144, EDU 157 and ENG 111                     | None                                              |
|             | This course covers methods of developing cognitive and language/communication skills in children. Emphasis is placed on planning the basic components of language and cognitive processes in developing curriculum activities. Upon completion, students should be able to identify, plan, select materials and equipment, and implement and evaluate developmentally appropriate curriculum activities. |

| **EDU 216** | Foundations of Education (EDU 216 replaced EDU 116) | 3     | ENG 090 and RED 090, or placement                | None                                              |
|             | This course introduces the American educational system and the teaching profession. Topics include historical and philosophical foundations of education, contemporary educational, structural, legal, and financial issues, PRAXIS I preparation and observation and participation in public school classrooms. Upon completion, students should be able to relate classroom observations to the roles of teachers and schools and the process of teacher education. |

| **EDU 221** | Children with Exceptional Needs                 | 3     | EDU 144 and EDU 145 or PSY 244 and PSY 245       | None                                              |
|             | This course, based on the foundation of typical development, introduces working with children with exceptionalities. Emphasis is placed on the characteristics and assessment of children and strategies for adapting the learning environment. Upon completion, students should be able to recognize atypical development, make appropriate referrals, collaborate with families and professionals to plan, implement, and evaluate inclusion strategies. |
EDU 234 Infants, Toddlers, and Twos  3 0 0 3
Prerequisites: EDU 119, EDU 144
Corequisites: None
This course covers the skills needed to effectively implement group care for infants, toddlers, and two-year olds. Emphasis is placed on child development and developmentally appropriate practices. Upon completion, students should be able to identify, plan, select materials and equipment, and implement and evaluate a developmentally appropriate curriculum.

EDU 251 Exploration Activities  3 0 0 3
Prerequisites: EDU 151, EDU 185 and ENG 112
Corequisites: COE 121
This course covers discovery experiences in science, math, and social studies. Emphasis is placed on developing concepts for each area and encouraging young children to explore, discover, and construct concepts. Upon completion, students should be able to discuss the discovery approach to teaching, explain major concepts in each area, and plan appropriate experiences for children.

EDU 261 Early Childhood Administration I  3 0 0 3
Prerequisites: EDU 119
Corequisites: None
This course covers the policies, procedures, and responsibilities for the management of early childhood education programs. Topics include implementation of goals, principles of supervision, budgeting and financial management, and meeting the standards for a NC Child Day Care license. Upon completion, students should be able to develop program goals, explain licensing standards, determine budgeting needs, and describe effective methods of personnel supervision. This course is also available through the Virtual Learning Community (VLC).

EDU 262 Early Childhood Administration II  3 0 0 3
Prerequisites: EDU 261
Corequisites: None
This course provides a foundation for budgetary, financial, and personnel management of the child care center. Topics include budgeting, financial management, marketing, hiring, supervision, and professional development of a child care center. Upon completion, students should be able to formulate marketing, financial management, and fund development plans and develop personnel policies, including supervision and staff development plans.

EDU 263 Developing School-Age Programs  2 0 0 2
Prerequisites: EDU 119, EDU 144, EDU 145
Corequisites: None
This course introduces the methods and procedures for operating a school-age program in either the public or proprietary setting. Emphasis is placed on constructing and organizing the physical environment as well as planning and developing a school-age program. Upon completion, students should be able to plan and develop a quality school-age program.

EDU 271 Educational Technology  2 0 2 3
Prerequisites: EDU 185, EDU 151, EDU 281, EDU 152, CIS 111
Corequisites: None
This course introduces the use of technology to enhance teaching and learning in all educational settings. Topics include technology concepts, instructional strategies, materials and adaptive technology for children with exceptionalities, facilitation of assessment/evaluation, and ethical issues surrounding the use of technology. Upon completion, students should be able to apply technology enhanced instructional strategies, use a variety of technology resources and demonstrate appropriate technology skills in educational environments.

EDU 280 Language and Literacy Experiences  3 0 0 3
Prerequisites: EDU 145 and EDU 185
Corequisites: None
This course explores the continuum of children's communication development, including verbal and written language acquisition and other forms of communication. Topics include selection of literature and other media, the integration of literacy concepts throughout the classroom environment, inclusive practices and appropriate assessments. Upon completion, students should be able to select, plan, implement and evaluate developmentally appropriate literacy experiences. This course is also available through the Virtual Learning Community (VLC).

EDU 282 Early Childhood Literature  3 0 0 3
Prerequisites: EDU 145 and EDU 185
Corequisites: None
This course covers the history, selection, and integration of literature and language in the early childhood curriculum. Topics include the history and selection of developmentally appropriate children's literature and the use of books and other media to enhance language and literacy in the classroom. Upon completion, students should be able to select appropriate books for storytelling, reading aloud, puppetry, flannel board use, and other techniques.

EFL 001 Skills Lab  - - - -
Prerequisites: None
Corequisites: None
This skills lab provides supplemental instruction to non-native speakers of English enrolled in pre-curriculum and curriculum classes. The skills lab requires instructor referrals.

EFL 030 English for Special Purposes  3 0 0 3
Prerequisites: None
Corequisites: None
This course will provide instruction in academic and professional language for non-native speakers of English. Emphasis is placed on development of integrated language use for carrying out a specific academic task. Upon completion, students should be able to demonstrate improved language skills for participation and success within the particular topic area. This 3-credit elective is appropriate for students who would like to improve accuracy and fluency in spelling and reading of academic English.

EFL 050 English for Academic Purposes  5 0 0 5
Prerequisites: None
Corequisites: None
This course will provide instruction in academic and professional language skills for non-native speakers of English. Emphasis is placed on development of integrated language skills for use in studying a particular content area. Upon completion, students should be able to demonstrate improved academic language, content-specific vocabulary and skills, and cultural knowledge in the topic area. This 5-credit elective is appropriate for students who would like to improve pronunciation of academic English.

EFL 061 Listening/Speaking I  5 0 0 5
Prerequisites: None
Corequisites: None
This course is designed to provide the basic oral/aural language skills needed for essential daily conversation on campus and in the community. Emphasis is placed on vocabulary building, communication in various social and academic situations, and...
various spoken grammatical skills. Upon completion, students should be able to produce and understand English dealing with routine topics using basic syntax and vocabulary skills. This course is intended for non-native speakers of English.

**EFL 062 Listening/Speaking II** 5 0 0 5
Prerequisites: EFL 061
Corequisites: None
This course is designed to enhance intermediate listening and speaking skills of non-native speakers of English. Emphasis is placed on the ability to hold extended conversation and on the ability to understand extended spoken discourse. Upon completion, students should be able to demonstrate improved listening skills and strategies in a variety of settings.

**EFL 063 Listening/Speaking III** 5 0 0 5
Prerequisites: EFL 062
Corequisites: None
This course is designed to increase the ability and confidence of high intermediate-level non-native speakers of English in verbal expression and listening comprehension. Emphasis is placed on listening/speaking skills which would be appropriate for group discussions, oral presentations, and note taking. Upon completion, students should be able to successfully participate in high intermediate-level listening and speaking activities.

**EFL 064 Listening/Speaking IV** 5 0 0 5
Prerequisites: EFL 063
Corequisites: None
This course is designed to prepare advanced-level non-native speakers of English for academic and professional speaking and listening activities. Emphasis is placed on learning and practicing strategies of effective oral expression and comprehension of spoken discourse in informal and formal settings. Upon completion, students should be able to effectively participate in activities appropriate to academic and professional settings.

**EFL 071 Reading I** 5 0 0 5
Prerequisites: None
Corequisites: None
This course is designed to help those with literacy skills achieve reading fluency in English at the beginning level. Emphasis is placed on basic academic and cultural vocabulary and reading strategies which include self-monitoring, and recognizing organizational styles and context clues. Upon completion, students should be able to use these strategies to read and comprehend basic academic, narrative, and expository texts. This course is intended for non-native speakers of English.

**EFL 072 Reading II** 5 0 0 5
Prerequisites: EFL 071
Corequisites: None
This course provides preparation in academic and general purpose reading in order to achieve reading fluency at the low-intermediate level. Emphasis is placed on expanding academic and cultural vocabulary and developing effective reading strategies to improve comprehension and speed. Upon completion, students should be able to read and comprehend narrative and expository texts at the low-intermediate instructional level. This course is intended for non-native speakers of English.

**EFL 073 Reading III** 5 0 0 5
Prerequisites: EFL 072
Corequisites: None
This course is designed to develop fundamental reading and study strategies at the intermediate level needed for curriculum programs. Emphasis is placed on building vocabulary and cultural knowledge, improving comprehension, and developing study strategies on basic-level college materials and literary works. Upon completion, students should be able to read and comprehend narrative and expository texts at the intermediate instructional level. This course is intended for non-native speakers of English.

**EFL 074 Reading IV** 5 0 0 5
Prerequisites: EFL 073
Corequisites: None
This course is designed to enhance the academic reading skills for successful reading ability as required in college-level courses. Emphasis is placed on strategies for effective reading and the utilization of these strategies to improve comprehension, analytical skills, recall, and overall reading speed. Upon completion, students should be able to comprehend, synthesize, and critique multi-disciplinary college-level reading/textbook materials. This course is intended for non-native speakers of English.

**EFL 081 Grammar I** 5 0 0 5
Prerequisites: None
Corequisites: EFL 091
This course provides non-native speakers of English with a variety of fundamental grammatical concepts which enrich language skills and comprehension. Emphasis is on key basic grammatical structures and opportunities for practice which incorporate grammatical knowledge into various skills areas. Upon completion, students should be able to demonstrate comprehension and correct usage of specified grammatical concepts.

**EFL 082 Grammar II** 5 0 0 5
Prerequisites: EFL 081
Corequisites: None
This course provides non-native speakers of English with a variety of basic grammatical concepts which enrich language skills and comprehension. Emphasis is on key low-intermediate grammatical structures and opportunities for practice which incorporate grammatical knowledge into various skills areas. Upon completion, students should be able to demonstrate by written and oral means the comprehension and correct usage of specified grammatical concepts.

**EFL 083 Grammar III** 5 0 0 5
Prerequisites: EFL 082
Corequisites: None
This course is designed to provide high-intermediate non-native speakers of English with a knowledge of grammatical structures that improves academic communication. Emphasis is placed on using high-intermediate grammatical structures in meaningful contexts through exercises integrating the use of newly acquired structures with previously learned structures. Upon completion, students should be able to demonstrate improved proficiency, comprehension, and grammatical accuracy.

**EFL 084 Grammar IV** 5 0 0 5
Prerequisites: EFL 083
Corequisites: None
This course is designed to give non-native speakers of English a full understanding of advanced grammatical structures and techniques. Emphasis is placed on oral and written communicative fluency through the study of advanced grammatical forms. Upon completion, students should be able to incorporate the structures covered in both spoken and written form, demonstrating improved proficiency, comprehension, and grammatical accuracy.

**EFL 091 Composition I** 5 0 0 5
Prerequisites: None
Corequisites: EFL 081
This course introduces basic sentence structure and writing paragraphs. Emphasis is placed on word order, verb tense-aspect system, auxiliaries, word forms, and simple organization and basic
transitions in writing paragraphs. Upon completion, students should be able to demonstrate a basic understanding of grammar and ability to write English paragraphs using appropriate vocabulary, organization, and transitions. This course is intended for non-native speakers of English.

**EFL 092 Composition II** 5 0 0 5
Prerequisites: EFL 091
Corequisites: None
This course provides preparation in low-intermediate academic and general-purpose writing. Emphasis is placed on writing as a process, paragraph development, and basic essay organization. Upon completion, students should be able to write and independently edit and understand the major elements of the writing process, sentence, paragraph, and essay. This course is intended for non-native speakers of English.

**EFL 093 Composition III** 5 0 0 5
Prerequisites: EFL 092
Corequisites: None
This course covers intermediate-level academic and general-purpose writing. Emphasis is placed on the writing process, content, organization, and language use in formal academic compositions in differing rhetorical modes. Upon completion, students should be able to effectively use the writing process in a variety of rhetorical modes. This course is intended for non-native speakers of English.

**EFL 094 Composition IV** 5 0 0 5
Prerequisites: EFL 093
Corequisites: None
This course prepares low-advanced non-native speakers of English to determine the purpose of their writing and to write paragraphs and essays to fulfill that purpose. Emphasis is placed on unity, coherence, completeness, audience, and the writing process; and the grammatical forms and punctuation appropriate for each kind of writing. Upon completion, students should be able to write unified, coherent, and complete paragraphs and essays which are grammatical and appropriate for the intended audience. This course is intended for non-native speakers of English.

**EFL 095 Composition V** 5 0 0 5
Prerequisites: EFL 094
Corequisites: None
This course is designed to prepare advanced non-native speakers of English for college-level composition courses. Emphasis is placed on the study and process of writing formal essays and research papers and the analysis of literary, expository, and descriptive writings. Upon completion, students should be able to write and analyze professional and peer compositions and apply basic research principles. This course is intended for non-native speakers of English.

**EGR 115 Introduction to Technology** 2 6 0 4
Prerequisites: None
Corequisites: None
This course introduces the basic skills required for technical problem solving and communication. Emphasis is placed on the use of common office applications software such as spreadsheets, word processing, graphics, and Internet access. Upon completion, students should be able to write unified, coherent, and complete paragraphs and essays which are grammatical and appropriate for the intended audience. This course is intended for non-native speakers of English.

**EGR 125 Appl Software for Tech** 1 2 0 2
Prerequisites: None
Corequisites: None
This course introduces personal computer software and teaches students how to customize the software for technical applications. Emphasis is placed on the use of common office applications software such as spreadsheets, word processing, graphics, and Internet access. Upon completion, students should be able to demonstrate competency in using applications software to solve technical problems and communicate the results in text and graphical formats.

**EGR 130 Engineering Cost Control** 2 2 0 3
Prerequisites: MAT 121, MAT 161, or MAT 171
Corequisites: None
This course covers the management of projects and systems through the control of costs. Topics include economic analysis of alternatives within budget constraints and utilization of the time value of money approach. Upon completion, students should be able to make choices that optimize profits on both short-term and long-term decisions.

**EGR 131 Introduction to Electronics Technology** 1 2 0 2
Prerequisites: None
Corequisites: None
This course introduces the basic skills required for electrical/electronics technicians. Topics include soldering/desoldering, safety practices, test equipment, scientific calculators, AWG wire table, the resistor color code, electronic devices, problem solving, and use of hand tools. Upon completion, students should be able to solder/desolder, operate test equipment, apply problem-solving techniques, and use a scientific calculator.

**EGR 225 Engineering Dynamics** 3 0 0 3
Prerequisites: EGR 220
Corequisites: MAT 273
This course introduces the concepts of engineering based on the analysis of motion in Cartesian, cylindrical, and spherical coordinate systems. Topics include the two and three dimensional motion of particles and rigid bodies, the forces associated with that motion, and relative motion between two coordinate systems. Upon completion, students should be able to solve problems which require the ability to analyze the motion and forces involved in a dynamic system. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**EGR 285 Design Project** 0 4 0 2
Prerequisites: None
Corequisites: None
This course provides the opportunity to design and construct an instructor-approved project using previously acquired skills. Emphasis is placed on selection, proposal, design, construction, testing, and documentation of the approved project. Upon completion, students should be able to present and demonstrate operational projects.

**ELC 110 Telecommunications Circuits/Devices** 3 3 0 4
Prerequisites: None
Corequisites: None
This course introduces the basic AC/DC components, semiconductor-based devices, and other related components as applied to telecommunication circuits. Emphasis is placed on analysis, applications, and testing of these circuits. Upon completion, students will be able to construct, verify, analyze, and troubleshoot these circuits.
### COURSE DESCRIPTIONS

<table>
<thead>
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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Type</th>
<th>Prerequisites</th>
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<td>ELC 111</td>
<td>Introduction to Electricity</td>
<td>2</td>
<td>6 0 4</td>
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<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<td>This course introduces the fundamental concepts of electricity and test equipment to non-electrical/electronic majors. Topics include basic DC and AC principles (voltage, resistance, current, impedance); components (resistors, inductors, and capacitors); power; and operation of test equipment. Upon completion, students should be able to construct and analyze simple DC and AC circuits using electrical test equipment.</td>
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<tr>
<td>ELC 112</td>
<td>DC/AC Electricity</td>
<td>3</td>
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<td>Corequisites: None</td>
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<td>This course introduces the fundamental concepts of and computations related to DC/AC electricity. Emphasis is placed on DC/AC circuits, components, operation of test equipment; and other related topics. Upon completion, students should be able to construct, verify, troubleshoot, and repair DC/AC circuits.</td>
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<tr>
<td>ELC 112a</td>
<td>DC/AC Electricity-Part 1</td>
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<td>This course is part 1 of a course that introduces the fundamental concepts of and computations related to DC/AC electricity. Emphasis is placed on DC/AC circuits, components, operation of test equipment; and other related topics. Upon completion, students should be able to construct, verify, troubleshoot, and repair DC/AC circuits.</td>
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<td>ELC 112b</td>
<td>DC/AC Electricity Part 2</td>
<td>1</td>
<td>3 0 2</td>
<td>None</td>
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<td></td>
<td>Prerequisites: ELC 112a</td>
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<td>Corequisites: None</td>
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<td>This course is part 2 of a course that introduces the fundamental concepts of and computations related to DC/AC electricity. Emphasis is placed on DC/AC circuits, components, operation of test equipment; and other related topics. Upon completion, students should be able to construct, verify, troubleshoot, and repair DC/AC circuits.</td>
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<td>ELC 113</td>
<td>Basic Wiring I</td>
<td>2</td>
<td>6 0 4</td>
<td>None</td>
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<td></td>
<td>Prerequisites: ELC 112</td>
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<td>Corequisites: None</td>
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<td>This course introduces the care/usage of tools and materials used in electrical installations and the requirements of the National Electrical Code. Topics include NEC, electrical safety, and electrical blueprint reading; planning, layout; and installation of electrical distribution equipment; lighting; overcurrent protection; conductors; branch circuits; and conduits. Upon completion, students should be able to properly install conduits, wiring, and electrical distribution equipment associated with basic electrical installations.</td>
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<tr>
<td>ELC 113a</td>
<td>Basic Wiring I-Part 1</td>
<td>1</td>
<td>3 0 2</td>
<td>None</td>
<td>ELC 112a</td>
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<td>Prerequisites: ELC 112a</td>
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<td>Corequisites: ELC 112a</td>
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<td>This is Part 1 of a course that introduces the care/usage of tools and materials used in electrical installations and the requirements of the National Electrical Code. Topics include NEC, electrical safety, and electrical blueprint reading; planning, layout; and installation of electrical distribution equipment; lighting; overcurrent protection; conductors; branch circuits; and conduits. Upon completion of parts 1 and 2, students should be able to properly install conduits, wiring, and electrical distribution equipment associated with basic electrical installations.</td>
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<tr>
<td>ELC 113b</td>
<td>Basic Wiring I-Part 2</td>
<td>1</td>
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<td>ELC 113a</td>
<td>ELC 112b</td>
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<td>Corequisites: None</td>
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<td>This is Part 2 of a course that introduces the care/usage of tools and materials used in electrical installations and the requirements of the National Electrical Code. Topics include NEC, electrical safety, and electrical blueprint reading; planning, layout; and installation of electrical distribution equipment; lighting; overcurrent protection; conductors; branch circuits; and conduits. Upon completion of Parts 1 and 2, students should be able to properly install conduits, wiring, and electrical distribution equipment associated with basic electrical installations.</td>
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<tr>
<td>ELC 114</td>
<td>Basic Wiring II</td>
<td>2</td>
<td>6 0 4</td>
<td>None</td>
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<td></td>
<td>Prerequisites: ELC 113</td>
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<td>Corequisites: None</td>
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<td>This course provides instruction in the application of electrical tools, materials, and test equipment associated with electrical installations. Topics include the NEC; safety; electrical blueprints; planning, layout, and installation of equipment and conduits; and wiring devices such as panels and overcurrent devices. Upon completion, students should be able to properly install equipment and conduit associated with electrical installations.</td>
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<tr>
<td>ELC 114a</td>
<td>Basic Wiring II-Part 1</td>
<td>1</td>
<td>3 0 2</td>
<td>ELC 113</td>
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<td></td>
<td>Prerequisites: ELC 113a</td>
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<td>Corequisites: None</td>
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<td>This is Part 1 of a course that provides additional instruction in the application of electrical tools, materials, and test equipment associated with electrical installations. Topics include the NEC; safety; electrical blueprints; planning, layout, and installation of equipment and conduits; and wiring devices such as panels and overcurrent devices. Upon completion of Parts 1 and 2, students should be able to properly install equipment and conduit associated with electrical installations.</td>
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<tr>
<td>ELC 114b</td>
<td>Basic Wiring II-Part 2</td>
<td>1</td>
<td>3 0 2</td>
<td>ELC 114a</td>
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<td>Prerequisites: ELC 114a</td>
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<td>Corequisites: None</td>
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<td>This is Part 2 of a course that provides additional instruction in the application of electrical tools, materials, and test equipment associated with electrical installations. Topics include the NEC; safety; electrical blueprints; planning, layout, and installation of equipment and conduits; and wiring devices such as panels and overcurrent devices. Upon completion of Parts 1 and 2, students should be able to properly install equipment and conduit associated with electrical installations.</td>
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<td>ELC 115</td>
<td>Industrial Wiring</td>
<td>2</td>
<td>6 0 4</td>
<td>None</td>
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<td>Prerequisites: ELC 114</td>
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<td>Corequisites: None</td>
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<td>This course covers layout, planning, and installation of wiring systems in industrial facilities. Emphasis is placed on industrial wiring methods and materials. Upon completion, students should be able to install industrial systems and equipment.</td>
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<td>ELC 116</td>
<td>Telecommunications Cabling</td>
<td>1</td>
<td>2 0 2</td>
<td>None</td>
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<td></td>
<td>Prerequisites: None</td>
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<td></td>
<td>Corequisites: None</td>
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<td>This course introduces the theory and practical application of both copper and fiber cabling for telecom systems. Topics include transmission theory, noise, standards, cable types and systems, connectors, physical layer components, installation, and ground/shielding techniques. Upon completion, students should be able to choose the correct cable, install, test, and troubleshoot cabling for telecom.</td>
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<td>Units</td>
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<tr>
<td>ELC 117</td>
<td>Motors and Controls</td>
<td>2</td>
<td>This course introduces the fundamental concepts of motors and motor controls. Topics include ladder diagrams, pilot devices, contactors, motor starters, motors, and other control devices. Upon completion, students should be able to properly select, connect, and troubleshoot motors and control circuits.</td>
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<tr>
<td>ELC 117a</td>
<td>Motors and Controls-Part 1</td>
<td>1</td>
<td>This is Part 1 of a course that introduces the fundamental concepts of motors and motor controls. Topics include ladder diagrams, pilot devices, contactors, motor starters, motors, and other control devices. Upon completion of Parts 1 and 2, students should be able to properly select, connect, and troubleshoot motors and control circuits.</td>
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<tr>
<td>ELC 117b</td>
<td>Motors and Controls-Part 2</td>
<td>1</td>
<td>This is Part 2 of a course that introduces the fundamental concepts of motors and motor controls. Topics include ladder diagrams, pilot devices, contactors, motor starters, motors, and other control devices. Upon completion of Parts 1 and 2, students should be able to properly select, connect, and troubleshoot motors and control circuits.</td>
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<td>ELC 118</td>
<td>National Electrical Code</td>
<td>1</td>
<td>This course covers the use of the current National Electrical Code. Topics include the NEC history, wiring methods, overcurrent protection, materials, and other related topics. Upon completion, students should be able to effectively use the NEC.</td>
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<td>ELC 119</td>
<td>NEC Calculations</td>
<td>1</td>
<td>This course covers branch circuit, feeder, and service calculations. Emphasis is placed on sections of the National Electrical Code related to calculations. Upon completion, students should be able to use appropriate code sections to size wire, conduit, and overcurrent devices for branch circuits, feeders, and service.</td>
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<td>ELC 121</td>
<td>Electrical Estimating</td>
<td>1</td>
<td>This course covers the principles involved in estimating electrical projects. Topics include take-offs of materials and equipment, labor, overhead, and profit. Upon completion, students should be able to estimate simple electrical projects.</td>
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<td>ELC 126</td>
<td>Electrical Computations</td>
<td>2</td>
<td>This course introduces the fundamental applications of mathematics that are used by an electrical/electronics technician. Topics include whole numbers, fractions, decimals, powers, roots, simple electrical formulas, and usage of a scientific calculator. Upon completion, students should be able to solve simple electrical mathematical problems.</td>
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<tr>
<td>ELC 126a</td>
<td>Electrical Computations-Part 1</td>
<td>1</td>
<td>This is Part 1 of a course that introduces the fundamental applications of mathematics that are used by an electrical/electronics technician. Topics include whole numbers, fractions, decimals, powers, roots, simple electrical formulas, and usage of a scientific calculator. Upon completion of Parts 1 and 2, students should be able to solve simple electrical mathematical problems.</td>
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<tr>
<td>ELC 126b</td>
<td>Electrical Computations-Part 2</td>
<td>1</td>
<td>This is Part 2 of a course that introduces the fundamental applications of mathematics that are used by an electrical/electronics technician. Topics include whole numbers, fractions, decimals, powers, roots, simple electrical formulas, and usage of a scientific calculator. Upon completion of Parts 1 and 2, students should be able to solve simple electrical mathematical problems.</td>
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<td>ELC 127</td>
<td>Software for Technicians</td>
<td>1</td>
<td>This course introduces computer software which can be used to solve electrical/electronics problems. Topics include electrical/electronics calculations and applications. Upon completion, students should be able to utilize a personal computer for electrical/electronics-related applications.</td>
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<td>ELC 128</td>
<td>Introduction to PLC</td>
<td>2</td>
<td>This course introduces the programmable logic controller (PLC) and its associated applications. Topics include ladder logic diagrams, input/output modules, power supplies, surge protection, selection/installation of controllers, and interfacing of controllers with equipment. Upon completion, students should be able to install PLCs and create simple programs.</td>
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<td>ELC 131</td>
<td>DC/AC Circuit Analysis</td>
<td>4</td>
<td>This course introduces DC and AC electricity with an emphasis on circuit analysis, measurements, and operation of test equipment. Topics include DC and AC principles, circuit analysis laws and theorems, components, test equipment operation, circuit simulation software, and other related topics. Upon completion, students should be able to interpret circuit schematics; design, construct, verify, and analyze DC/AC circuits; and properly use test equipment.</td>
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<td>ELC 134</td>
<td>Transformer Applications</td>
<td>1</td>
<td>This course covers single and three phase transformer applications as found in industrial/commercial buildings and machinery. Topics include transformer principles, single and three phase calculations, and connections. Upon completion, students should be able to understand single and three phase transformers, make transformer connections, and make calculations.</td>
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<td>ELC 229</td>
<td>Applications Project</td>
<td>1</td>
<td>This course provides an individual and/or integrated team approach to a practical project as approved by the instructor.</td>
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</table>
Topics include project selection and planning, implementation and testing, and a final presentation. Upon completion, students should be able to plan and implement an applications-oriented project.

**ELC 231 Electric Power Systems** 3 2 0 4
Prerequisites: None
Corequisites: None
This course covers the basic principles of electric power systems, including transmission lines, generator and transformer characteristics, and fault detection and correction. Emphasis is placed on line diagrams and per unit calculations for circuit performance analysis in regards to voltage regulation, power factor, and protection devices. Upon completion, students should be able to analyze simple distribution subsystems, calculate fault current, and determine the size and type of circuit protection devices.

**ELC 233 Energy Management** 2 2 0 3
Prerequisites: ELC 231
Corequisites: None
This course covers energy management principles and techniques typical of those found in industry and commercial facilities, including load control and peak demand reduction systems. Topics include load and peak demand calculations, load shedding, load balance and power factor, priority scheduling, remote sensing and control, and supplementary/alternative energy sources. Upon completion, students should be able to determine energy management parameters, calculate demand and energy use, propose energy management procedures, and implement alternative energy sources.

**ELN 112 Diesel Electronics System** 2 6 0 4
Prerequisites: None
Corequisites: None
This course introduces electronic theory and applications as used in medium and heavy duty vehicles. Emphasis is placed on the basic function and operation of semiconductor and integrated circuits. Upon completion, students should be able to identify electronic components, explain their use and function, and use meters and flow charts to diagnose and repair systems.

**ELN 113 Electronic Fuel Injection** 1 2 0 2
Prerequisites: None
Corequisites: None
This course covers the function of the various sensors used to provide feedback control to current model diesel engines. Emphasis is placed on the operation of ECM-controlled fuel injectors and testing using current industry methods. Upon completion, students should be able to obtain information from the electronic fuel system using current test programs, fuel tree, and digital meters.

**ELN 116 Telecommunications Digital Logic** 3 3 0 4
Prerequisites: None
Corequisites: None
This course covers the application of binary logic circuits to digital systems. Emphasis is placed on circuits that are utilized in telecom systems. Upon completion, students will be able to construct, analyze, verify, and troubleshoot telecom digital systems using appropriate techniques and test equipment.

**ELN 131 Electronics Devices** 3 3 - 4
Prerequisites: None
Corequisites: ELC 112, ELC 131, or ELC 140
This course includes semiconductor-based devices such as diodes, bipolar transistors, FETs, thermistors, and related components. Emphasis is placed on analysis, selection, biasing, and applications in power supplies, small signal amplifiers, and switching and control circuits. Upon completion, students should be able to construct, analyze, verify, and troubleshoot discrete component circuits using appropriate techniques and test equipment.

**ELN 132 Linear IC Applications** 3 3 0 4
Prerequisites: ELN 131
Corequisites: None
This course introduces the characteristics and applications of linear integrated circuits. Topics include op-amp circuits, differential amplifiers, instrumentation amplifiers, waveform generators, active filters, PLLs, and IC voltage regulators. Upon completion, students should be able to construct, analyze, verify, and troubleshoot linear integrated circuits using appropriate techniques and test equipment.

**ELN 133 Digital Electronics** 3 3 0 4
Prerequisites: None
Corequisites: None
This course covers combinational and sequential logic circuits. Topics include number systems, Boolean algebra, logic families, MSI and SSI circuits, AOI/ODI conversion, and other related topics. Upon completion, students should be able to construct, analyze, verify, and troubleshoot digital circuits using appropriate techniques and test equipment. This course is also available through the Virtual Learning Community (VLC).

**ELN 136 Telecommunications Digital Systems** 3 3 0 4
Prerequisites: None
Corequisites: None
This course covers the applications of microprocessors in digital communication circuits. Emphasis is placed on interfacing I/O peripherals, data communication circuits, DSP circuits, UART's modems, and other communication circuits. Upon completion, students will be able to design, construct, verify, analyze, and troubleshoot using appropriate techniques and test equipment.

**ELN 150 CAD for Electronics** 1 3 0 2
Prerequisites: CIS 110 or CIS 111 or ELC 127
Corequisites: None
This course introduces computer-aided drafting (CAD) with an emphasis on applications in the electronics field. Topics include electronics industry standards (symbols, schematic diagrams, layouts); drawing electronic circuit diagrams; and specialized electronic drafting practices and components such as resistors, capacitors, and ICs. Upon completion, students should be able to prepare electronic drawings with CAD software.

**ELN 154 Introduction to Data Communications** 2 3 0 3
Prerequisites: ELN 133
Corequisites: None
This course introduces the principal elements and theory (analog and digital techniques) of data communication systems and how they are integrated as a complete network. Topics include an overview of data communication, OSI model, transmission modes, serial and parallel interfaces, applications of ICs, protocols, network configurations, modems, and related applications. Upon completion, students should be able to demonstrate knowledge of the concepts associated with data communication systems and high speed networks.

**ELN 193 Selected Topics in Electronics Engineering Technology** - - - 3
Prerequisites: Varies, based on topic
Corequisites: None
This course provides an opportunity to explore areas of current interest in Electronics Engineering Technology. Emphasis is
place on subject matter appropriate to electronics engineering technology. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

ELN 229 Industrial Electronics 3 3 0 4
Prerequisites: ELC 112
Corequisites: None
This course covers semiconductor devices used in industrial applications. Topics include the basic theory, application, and operating characteristics of semiconductor devices. Upon completion, students should be able to install and/or troubleshoot these devices for proper operation in an industrial electronic circuit.

ELN 229a Industrial Electronics - Part 1 3 0 0 3
Prerequisites: ELN 229a
Corequisites: None
This course is part 1 of a course that covers semiconductor devices used in industrial applications. Topics include the basic theory, application, and operating characteristics of semiconductor devices. Upon completion, students should be able to install and/or troubleshoot these devices for proper operation in an industrial electronic circuit.

ELN 229b Industrial Electronics - Part 2 0 3 0 1
Prerequisites: ELN 229a
Corequisites: None
This course is part 2 of a course that covers semiconductor devices used in industrial applications. Topics include the basic theory, application, and operating characteristics of semiconductor devices. Upon completion, students should be able to install and/or troubleshoot these devices for proper operation in an industrial electronic circuit.

ELN 231 Industrial Controls 2 3 0 3
Prerequisites: ELC 131 or ELC 131 or ELC 140
Corequisites: None
This course introduces the fundamental concepts of solid-state control of rotating machinery and associated peripheral devices. Topics include rotating machine theory, ladder logic, electromechanical and solid state relays, motor controls, pilot devices, three-phase power systems, and other related topics. Upon completion, students should be able to interpret ladder diagrams and demonstrate an understanding of electromechanical and electronic control of rotating machinery.

ELN 232 Introduction to Microprocessors 3 3 0 4
Prerequisites: ELN 133
Corequisites: None
This course introduces microprocessor architecture and microcomputer systems including memory and input/output interfacing. Topics include assembly language programming, bus architecture, bus cycle types, I/O systems, memory systems, interrupts, and other related topics. Upon completion, students should be able to interpret, analyze, verify, and troubleshoot fundamental microprocessor circuits and programs using appropriate techniques and test equipment.

ELN 233 Microprocessor Systems 3 3 0 4
Prerequisites: ELN 232
Corequisites: None
This course covers the application and design of microprocessor control systems. Topics include control and interfacing of systems using AD/DA, serial/parallel I/O, communication protocols, and other related applications. Upon completion, students should be able to design, construct, program, verify, analyze, and troubleshoot fundamental microprocessor interface and control circuits using related equipment.

ELN 234 Communication Systems 3 3 0 4
Prerequisites: ELN 132 or ELN 140
Corequisites: None
This course introduces the fundamentals of electronic communication systems. Topics include the frequency spectrum, electrical noise, modulation techniques, characteristics of transmitters and receivers, and digital communications. Upon completion, students should be able to interpret analog and digital communication circuit diagrams, analyze transmitter and receiver circuits, and use appropriate communication test equipment.

ELN 235 Data Communication System 3 3 0 4
Prerequisites: ELN 133
Corequisites: None
This course covers data communication systems and the transmission of digital information from source to destination. Topics include data transmission systems, serial interfaces and modems, protocols, networks, and other related topics. Upon completion, students should be able to demonstrate knowledge of the concepts associated with data communication systems.

ELN 236 Fiber Optics and Lasers 3 2 0 4
Prerequisites: None
Corequisites: None
This course introduces the fundamentals of fiber optics and lasers. Topics include the transmission of light, characteristics of fiber optic and lasers and their systems; fiber optic production; types of lasers; and laser safety. Upon completion, students should be able to understand fiber optic communications and basic laser fundamentals.

ELN 237 Local Area Networks 2 3 0 3
Prerequisites: CIS 110 or CIS 111 or CET 111 or ELC 127
Corequisites: None
This course introduces the fundamentals of local area networks and their operation in business and computer environments. Topics include the characteristics of network topologies, system hardware (repeaters, bridges, routers, gateways), system configuration, and installation and administration of the LAN. Upon completion, students should be able to install, maintain, and manage a local area network.

ELN 252 Introduction to Communication Protocols 2 3 0 3
Prerequisites: TNE 111, TNE 231
Corequisites: None
This course introduces various communication protocols and their place within the OSI Model. Topics include background information, historical protocols, various individual physical, link and network layer protocols, and the integration of individual layer protocols. Upon completion, students should be able to effectively use existing and future communication protocols. Emphasis will be placed on data communications over WAN.

ELN 275 Troubleshooting 1 2 0 2
Prerequisites: None
Corequisites: ELN 133 or ELN 141
This course covers techniques of analyzing and repairing failures in electronic equipment. Topics include safety, signal tracing, use of service manuals, and specific troubleshooting methods for analog, digital, and other electronics-based circuits and systems. Upon completion, students should be able to logically diagnose and isolate faults and perform necessary repairs to meet manufacturers’ specifications.
COURSE DESCRIPTIONS

EMS 110 EMT-Basic  
Prerequisites: ENG 090 and RED 090  
Corequisites: None  
This course introduces basic emergency medical care. Topics include preparatory, airway, patient assessment, medical emergencies, trauma, infants and children, and operations. Upon completion, students should be able to demonstrate the knowledge and skills necessary to achieve North Carolina State or National Registry EMT-Basic certification.

EMS 120 Intermediate Interventions  
Prerequisites: EMS 110  
Corequisites: EMS 121, EMS 130, EMS 131  
This course is designed to provide the necessary information for interventions appropriate to the EMT-Intermediate and is required for intermediate certification. Topics include automated external defibrillation, basic cardiac electrophysiology, intravenous therapy, venipuncture, acid-base balance, and fluids and electrolytes. Upon completion, students should be able to properly establish an IV line, obtain venous blood, utilize AEDs, and correctly interpret arterial blood gases.

EMS 121 EMS Clinical Practicum I  
Prerequisites: EMS 110  
Corequisites: EMS 120, EMS 130, EMS 131  
This course is the initial hospital and field internship and is required for intermediate and paramedic certification. Emphasis is placed on intermediate-level care. Upon completion, students should be able to demonstrate competence with intermediate-level skills.

EMS 125 EMS Instructor Methodology  
Prerequisites: Enrollment in EMS program  
Corequisites: None  
This course covers the information needed to develop and instruct EMS courses. Topics include instructional methods, lesson plan development, time management skills, and theories of adult learning. Upon completion, students should be able to teach EMS courses and meet the North Carolina EMS requirements for instructor methodology.

EMS 130 Pharmacology I for EMS  
Prerequisites: EMS 110  
Corequisites: EMS 120, EMS 131  
This course introduces the fundamental principles of pharmacology and medication administration and is required for intermediate and paramedic certification. Topics include terminology, pharmacokinetics, pharmacodynamics, weights, measures, drug calculations, legislation, and administration routes. Upon completion, students should be able to accurately calculate drug dosages, properly administer medications, and demonstrate general knowledge of pharmacology.

EMS 131 Advanced Airway Management  
Prerequisites: EMS 110  
Corequisites: EMS 120, EMS 130  
This course is designed to provide advanced airway management techniques and is required for intermediate and paramedic certification. Topics include respiratory anatomy and physiology, airway, ventilation, adjuncts, surgical intervention, and rapid sequence intubation. Upon completion, students should be able to properly utilize all airway adjuncts and pharmacology associated with airway control and maintenance.

EMS 140 Rescue Scene Management  
Prerequisites: Enrollment in EMS program  
Corequisites: None  
This course introduces rescue scene management and is required for paramedic certification. Topics include response to hazardous material conditions, medical incident command, and extraction of patients from a variety of situations. Upon completion, students should be able to recognize and manage rescue operations based upon initial and follow-up scene assessment.

EMS 150 Emergency Vehicles and EMS Communications  
Prerequisites: Enrollment in EMS program  
Corequisites: None  
This course examines the principles governing emergency vehicles, maintenance of emergency vehicles, and EMS communication equipment and is required for paramedic certification. Topics include applicable motor vehicle laws affecting emergency vehicle operation, defensive driving, collision avoidance techniques, communication systems, and information management systems. Upon completion, students should have a basic knowledge of emergency vehicles, maintenance, and communication needs.

EMS 210 Advanced Patient Assessment  
Prerequisites: EMS 120, EMS 121, EMS 130, EMS 131  
Corequisites: None  
This course covers advanced patient assessment techniques and is required for paramedic certification. Topics include initial assessment, medical-trauma history, field impression, complete physical exam process, on-going assessment, and documentation skills. Upon completion, students should be able to utilize basic communication skills and record and report collected patient data.

EMS 220 Cardiology  
Prerequisites: EMS 120, EMS 130, EMS 131  
Corequisites: None  
This course provides an in-depth study of cardiovascular emergencies and is required for paramedic certification. Topics include anatomy and physiology, pathophysiology, rhythm interpretation, cardiac pharmacology, and patient treatment. Upon completion, students should be able to certify at the Advanced Cardiac Life Support Provider level utilizing American Heart Association guidelines.

EMS 221 EMS Clinical Practicum II  
Prerequisites: EMS 121  
Corequisites: None  
This course is a continuation of the hospital and field internship required for paramedic certification. Emphasis is placed on advanced-level care. Upon completion, students should be able to demonstrate continued progress in advanced-level patient care.

EMS 230 Pharmacology II for EMS  
Prerequisites: EMS 130  
Corequisites: None  
This course explores the fundamental classification and action of common pharmacologic agents. Emphasis is placed on the action and use of compounds most commonly encountered in the treatment of chronic and acutely ill patients. Upon completion, students should be able to demonstrate general knowledge of drugs covered during the course.
**COURSE DESCRIPTIONS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMS 231</td>
<td>EMS Clinical Practicum III</td>
<td>0 0 9 3</td>
<td>EMS 221 or EMS 222 and COE 121                                                                -slide eats and trauma to head, spine, thoracic, abdominal, and musculoskeletal areas with case presentations utilized for special problems situations. Upon completion, students should be able to recognize and manage trauma situations based upon patient impressions and should meet requirements of BTLS or PHTLS courses.</td>
<td>None</td>
</tr>
<tr>
<td>EMS 235</td>
<td>EMS Management</td>
<td>2 0 0 2</td>
<td>Enrollment in EMS program</td>
<td>None</td>
</tr>
<tr>
<td>EMS 240</td>
<td>Special Needs Patients</td>
<td>1 2 0 2</td>
<td>EMS 120, EMS 121 or EMS 122 and EMS 130, and EMS 131</td>
<td>None</td>
</tr>
<tr>
<td>EMS 241</td>
<td>EMS Clinical Practicum IV</td>
<td>0 0 9 3</td>
<td>EMS 231 or EMS 232 and COE 131</td>
<td>None</td>
</tr>
<tr>
<td>EMS 250</td>
<td>Advanced Medical Emergencies</td>
<td>2 3 0 3</td>
<td>EMS 120, EMS 130, EMS 131, and either EMS 121 or EMS 122</td>
<td>None</td>
</tr>
<tr>
<td>EMS 260</td>
<td>Advanced Trauma Emergencies</td>
<td>1 3 0 2</td>
<td>EMS 120, EMS 130, EMS 131, and either EMS 121 or COE 111 and EMS 122</td>
<td>None</td>
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<tr>
<td>EMS 270</td>
<td>Life Span Emergencies</td>
<td>2 2 0 3</td>
<td>EMS 120, EMS 130, EMS 131</td>
<td>None</td>
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<tr>
<td>EMS 285</td>
<td>EMS Capstone</td>
<td>1 3 0 2</td>
<td>EMS 220, EMS 250, EMS 260</td>
<td>None</td>
</tr>
<tr>
<td>ENG 001</td>
<td>Writing Skills Lab</td>
<td>- - - -</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td>ENG 070</td>
<td>Basic Language Skills</td>
<td>2 2 0 3</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td>ENG 075</td>
<td>Reading and Language Essentials</td>
<td>5 0 0 5</td>
<td></td>
<td>None</td>
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<tr>
<td>ENG 075A</td>
<td>Reading and Language Essentials Lab</td>
<td>0 2 0 1</td>
<td></td>
<td>None</td>
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</tbody>
</table>

Last Updated 6/10/08

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**COURSE DESCRIPTIONS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENG 080</td>
<td>Writing Foundations</td>
<td>3 2 0</td>
<td>ENG 070 or ENG 075 or placement</td>
<td>None</td>
<td>This course introduces the writing process and stresses effective sentences. Emphasis is placed on applying the conventions of written English, reflecting standard usage and mechanics in structuring a variety of sentences. Upon completion, students should be able to write correct sentences and a unified, coherent paragraph. Regular readings will provide the basis for additional, less structured writing practice.</td>
</tr>
<tr>
<td>ENG 090</td>
<td>Composition Strategies</td>
<td>3 0 0</td>
<td>ENG 080 or ENG 085 or placement</td>
<td>None</td>
<td>This course provides practice in the writing process and stresses effective paragraphs. Emphasis is placed on learning and applying the conventions of standard written English in developing paragraphs within the essay. Upon completion, students should be able to compose a variety of paragraphs and a unified, coherent essay.</td>
</tr>
<tr>
<td>ENG 090A</td>
<td>Composition Strategies Lab</td>
<td>0 2 0</td>
<td>ENG 080 or ENG 085 or placement</td>
<td>ENG 090</td>
<td>This writing lab is designed to practice the skills introduced in ENG 090. Emphasis is placed on learning and applying the conventions of standard written English in developing paragraphs within the essay. Upon completion, students should be able to compose a variety of paragraphs and a unified, coherent essay.</td>
</tr>
<tr>
<td>ENG 110</td>
<td>Freshman Composition</td>
<td>3 0 0</td>
<td>ENG 090, RED 080</td>
<td>None</td>
<td>This course is the first course in a series of two designed to develop informative and business writing skills. Emphasis is placed on logical organization of writing, including effective introductions and conclusions, precise use of grammar, and appropriate selection and use of sources. Upon completion, students should be able to produce clear, concise, well-organized short papers.</td>
</tr>
<tr>
<td>ENG 111</td>
<td>Expository Writing</td>
<td>3 0 0</td>
<td>ENG 090 and RED 090, or placement</td>
<td>None</td>
<td>This course is the required first course in a series of two designed to develop the ability to produce clear expository prose. Emphasis is placed on the writing process including audience analysis, topic selection, thesis support and development, editing, and revision. Upon completion, students should be able to produce unified, coherent, well-developed essays using standard written English. This course will also introduce students to the skills needed to produce a college-level research essay.</td>
</tr>
<tr>
<td>ENG 111A</td>
<td>Expository Writing Lab</td>
<td>0 2 0</td>
<td>ENG 090 and RED 090, or placement</td>
<td>ENG 111</td>
<td>This writing laboratory is designed to apply the skills introduced in ENG 111. Emphasis is placed on the editing and revision components of the writing process. Upon completion, students should be able to apply those skills in the production of final drafts in ENG 111.</td>
</tr>
<tr>
<td>ENG 112</td>
<td>Argument-Based Research</td>
<td>3 0 0</td>
<td>ENG 111</td>
<td>None</td>
<td>This course, the second in a series of two, introduces research techniques, documentation styles, and argumentative strategies. Emphasis is placed on analyzing data and incorporating research findings into documented argumentative essays and research projects. Upon completion, students should be able to summarize, paraphrase, interpret, and synthesize information from primary and secondary sources using standard research format and style.</td>
</tr>
<tr>
<td>ENG 113</td>
<td>Literature-Based Research</td>
<td>3 0 0</td>
<td>ENG 111</td>
<td>None</td>
<td>This course, the second in a series of two, expands the concepts developed in ENG 111 by focusing on writing that involves literature-based research and documentation. Emphasis is placed on critical reading and thinking and the analysis and interpretation of prose, poetry, and drama: plot, characterization, theme, cultural context, etc. Upon completion, students should be able to construct mechanically-sound, documented essays and research papers that analyze and respond to literary works. This course may include a variety of critical approaches.</td>
</tr>
<tr>
<td>ENG 114</td>
<td>Professional Research and Reporting</td>
<td>3 0 0</td>
<td>ENG 111</td>
<td>None</td>
<td>This course, the second in a series of two, is designed to teach professional communication skills. Emphasis is placed on research, listening, critical reading and thinking, analysis, interpretation, and design used in oral and written presentations. Upon completion, students should be able to work individually and collaboratively to produce well-designed business and professional written and oral presentations. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in English composition. This course is also available through the Virtual Learning Community (VLC).</td>
</tr>
<tr>
<td>ENG 125</td>
<td>Creative Writing I</td>
<td>3 0 0</td>
<td>ENG 111</td>
<td>None</td>
<td>This course is designed to provide students with the opportunity to practice the art of creative writing. Emphasis is placed on writing, fiction, poetry, and sketches. Upon completion, students should be able to craft and critique their own writing and critique the writing of others.</td>
</tr>
<tr>
<td>ENG 126</td>
<td>Creative Writing II</td>
<td>3 0 0</td>
<td>ENG 125</td>
<td>None</td>
<td>This course is designed as a workshop approach for advancing imaginative and literary skills. Emphasis is placed on the discussion of style, techniques, and challenges for first publications. Upon completion, students should be able to submit a piece of their writing for publication. A portfolio of finished work will be required of all students.</td>
</tr>
<tr>
<td>ENG 231</td>
<td>American Literature I</td>
<td>3 0 0</td>
<td>ENG 112, ENG 113, or ENG 114</td>
<td>None</td>
<td>This course covers selected works in American literature from its beginnings to 1865. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts.</td>
</tr>
</tbody>
</table>
| ENG 232     | American Literature II               | 3 0 0 | ENG 112, ENG 113, or ENG 114                                                | None            | This course covers selected works in American literature from 1865 to the present. Emphasis is placed on historical background,
This course introduces selected works from the Pacific, Asia, Africa, Europe, and the Americas from their literary beginnings to the Romantic Period. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts.

ENG 242 British Literature II
3 0 0 3
Prerequisites: ENG 112, ENG 113, or ENG 114
Corequisites: None
This course covers selected works in British literature from the Romantic Period to the present. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to literary works in their historical and cultural contexts.

ENG 253 The Bible as Literature
3 0 0 3
Prerequisites: ENG 112, ENG 113, or ENG 114
Corequisites: None
This course introduces the Hebrew Old Testament and the Christian New Testament as works of literary art. Emphasis is placed on the Bible's literary aspects including history, composition, structure, and cultural contexts. Upon completion, students should be able to identify and analyze selected books and passages using appropriate literary conventions.

ENG 261 World Literature I
3 0 0 3
Prerequisites: ENG 112, ENG 113, or ENG 114
Corequisites: None
This course introduces selected works from the Pacific, Asia, Africa, Europe, and the Americas from their literary beginnings through the seventeenth century. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to selected works.

ENG 262 World Literature II
3 0 0 3
Prerequisites: ENG 112, ENG 113, or ENG 114
Corequisites: None
This course introduces selected works from the Pacific, Asia, Africa, Europe, and the Americas from the eighteenth century to the present. Emphasis is placed on historical background, cultural context, and literary analysis of selected prose, poetry, and drama. Upon completion, students should be able to interpret, analyze, and respond to selected works.
This course provides an opportunity to explore areas of current interest in Environmental Science Technology. Emphasis is placed on subject matter appropriate to environmental science technology. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

**ENV 210 Management of Waste** 3 2 0 4  
Prerequisites: CHM 131, ENV 110 or BIO 140 and BIO 140A  
Corequisites: None  
This course examines contemporary environmental issues concerning the disposal of wastes. Topics include problems associated with the disposal of municipal solid waste, low-level radioactive waste, high-level radioactive waste, and hazardous and toxic waste. Upon completion, students should be able to demonstrate an understanding of the methodologies and technologies involved in the proper handling and disposal of wastes.

**ENV 212 Instrumentation** 3 3 0 4  
Prerequisites: ENV 110 or BIO 140 and BIO 140A  
Corequisites: CHM 132  
This course introduces analytical techniques used in quantitative analysis of chemical samples. Emphasis is placed on both classical wet techniques of chemical analysis and modern instrumental techniques. Upon completion, students should be able to use the methodologies and technologies involved in chemical analysis.

**ENV 214 Water Quality** 3 2 0 4  
Prerequisites: CHM 131, ENV 110 or BIO 140 and BIO 140A  
Corequisites: None  
This course examines the constituents of natural waters from a biological and geochemical perspective. Topics include common components of water, water sources, water law, health consequences, water treatment procedures, and the design of water treatment plants. Upon completion, students should be able to demonstrate an understanding of the biological, chemical, and geological factors affecting water quality.

**ENV 218 Environmental Health** 3 0 0 3  
Prerequisites: ENV 110 or BIO 140 and BIO 140A  
Corequisites: None  
This course covers the influence of environmental conditions on human health. Emphasis is placed on environmental contaminants and the major exposure routes of the human body. Upon completion, students should be able to examine segments of the environment, including air, water, and food, and determine how the conditions of these influence human health.

**ENV 220 Applied Ecology** 3 2 0 4  
Prerequisites: ENV 110 or BIO 140 and BIO 140A and BIO 111  
Corequisites: None  
This course covers the relationships between organisms and their environment and the interactions among organisms. Topics include environmental factors affecting aquatic and terrestrial systems, regulation and dynamics of populations, interactions among species, and the ecological viewpoint in modern land management. Upon completion, students should be able to demonstrate an understanding of the relationship between man and his environment and the ecological impact of human activities.

**ENV 222 Air Quality** 3 2 0 4  
Prerequisites: CHM 131, ENV 110 or BIO 140 and BIO 140A  
Corequisites: None  
This course introduces the study of air quality and air pollution. Emphasis is placed on air pollution basics, current atmospheric conditions, effects of air pollution, air quality analysis and measurement, and regulatory control of air pollution. Upon completion, students should be able to demonstrate an understanding of the environmental hazards associated with air pollution from a human health and welfare perspective.

**ENV 226 Environmental Law** 3 0 0 3  
Prerequisites: ENV 110 or BIO 140 and BIO 140A  
Corequisites: ENV 218  
This course covers federal laws and acts concerning environmental quality standards and the use of resources, legal procedures for enforcing laws, and problems concerning enforcement. Emphasis is placed on environmental law basics, water quality laws, air quality laws, waste disposal laws, and biological resource protection laws. Upon completion, students should be able to demonstrate an understanding of federal/state environmental laws and their importance to the protection of environmental quality.

**ENV 228 Environmental Issues** 1 0 0 1  
Prerequisites: None  
Corequisites: None  
This course provides a forum for the discussion of current environmental issues. Emphasis is placed on environmental news, regulations, accidents, and areas of controversy. Upon completion, students should be able to demonstrate an understanding of the impact of local, state, national, and global events on environmental quality.
FRE 141 Culture and Civilization | Description: This course, taught in English, provides an opportunity to explore issues related to the Francophone world. Topics include historical and current events, geography, and customs. Upon completion, students should be able to demonstrate entry-level skills in a quantity food service operation. Emphasis is placed on development of skills in knife, tool, and equipment operation.

FRE 151 Francophone Literature | Description: This course, in English, includes selected readings by Francophone writers. Topics include fictional and non-fictional works by representative authors from a variety of genres and literary periods. Upon completion, students should be able to analyze and discuss selected texts within relevant cultural and historical contexts.

FRE 161 Cultural Immersion | Description: This course explores Francophone culture through intensive study on campus and field experience in a host country or area. Topics include an overview of linguistic, historical, geographical, sociopolitical, economic, and/or artistic concerns of the area visited. Upon completion, students should be able to exhibit first-hand knowledge of issues pertinent to the host area and demonstrate an understanding of cultural differences.

FRE 181 French Lab 1 | Description: This course provides an opportunity to enhance acquisition of the fundamental elements of the French language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written French and demonstrate cultural awareness.

FRE 182 French Lab 2 | Description: This course provides an opportunity to enhance acquisition of the fundamental elements of the French language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written French and demonstrate cultural awareness.

FRE 211 Intermediate French I | Description: This course provides a review and expansion of the essential skills of the French language. Emphasis is placed on the study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future.

FRE 212 Intermediate French II | Description: This course is a continuation of FRE 211. Emphasis is placed on the continuing study of authentic and representative literary and cultural texts. Upon completion, students should be able to communicate spontaneously and accurately with increasing complexity and sophistication.

FRE 221 French Conversation | Description: This course provides an opportunity for intensive communication in spoken French. Emphasis is placed on vocabulary acquisition and interactive communication through the discussion of media materials and authentic texts. Upon completion, students should be able to discuss selected topics, express ideas and opinions clearly, and engage in formal and informal conversations.

FRE 281 French Lab 3 | Description: This course provides an opportunity to enhance the review and expansion of the essential skills of the French language. Emphasis is placed on the study of authentic and representative literary and cultural texts through the use of supplementary learning media and materials. Upon completion, students should be able to communicate effectively, accurately, and creatively about the past, present, and future.

FST 100 Intro to Foodservice | Description: This course is designed to develop an understanding of the foodservice industry, its terminology, mathematics, and measurements. Emphasis is placed on employability skills, vocabulary, fractions, ratio and proportion, and percents. Upon completion, students should be able to identify career paths, convert recipes, and differentiate standard measurements. This course is restricted to the Foodservice Technology program and is approvable for offering only at designated Department of Correction facilities.

FST 101 Intro to Baking | Description: This course introduces fundamental concepts, skills, and techniques in quantity baking. Topics include yeast and quick breads, cookies, cakes, and other baked goods. Upon completion, students should be able to prepare and evaluate baked products. This course is restricted to the Foodservice Technology program and is approvable for offering only at designated Department of Correction facilities.

FST 102 Basic Foodservice Skills | Description: This course introduces the concepts, skills, and techniques for volume food production in an institutional setting. Emphasis is placed on development of skills in knife, tool, and equipment handling and applying principles of food preparation to produce varieties of food products. Upon completion, students should be able to demonstrate entry-level skills in a quantity food service operation. This course is restricted to Foodservice Technology
program and is approvable for offering only at designated Department of Correction facilities.

FST 103 Safety and Sanitation 2 2 0 3
Prerequisites: None
Corequisites: None
This course provides practical experience with the basic principles of safety and sanitation in the foodservice industry. Emphasis is placed on personal hygiene habits, safety regulations, and food handling practices (H.A.C.C.P.) that protect the health of the consumer. Upon completion, students should be able to demonstrate appropriate safety and sanitation practices required in the foodservice industry. This course is restricted to Foodservice Technology program and is approvable for offering only at designated Department of Correction facilities.

G

GEO 111 World Regional Geography 3 0 0 3
Prerequisites: ENG 090 and RED 090
Corequisites: None
This course introduces the regional concept which emphasizes the spatial association of people and their environment. Emphasis is placed on the physical, cultural, and economic systems that interact to produce the distinct regions of the earth. Upon completion, students should be able to describe variations in physical and cultural features of a region and demonstrate an understanding of their functional relationships. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences. This course is also available through the Virtual Learning Community (VLC).

GEO 112 Cultural Geography 3 0 0 3
Prerequisites: RED 090, ENG 090
Corequisites: None
This course is designed to explore the diversity of human cultures and to describe their shared characteristics. Emphasis is placed on the characteristics, distribution, and complexity of earth’s cultural patterns. Upon completion, students should be able to demonstrate an understanding of the differences and similarities in human cultural groups. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

GIS 111 Introduction to GIS 2 2 0 3
Prerequisites: None
Corequisites: None
This course introduces the hardware and software components of a Geographic Information System and reviews GIS applications. Topics include data structures and basic functions, methods of data capture and sources of data, and the nature and characteristics of spatial data and objects. Upon completion, students should be able to identify GIS hardware components, typical operations, products/applications, and differences between database models and between raster and vector systems.

GIS 112 Introduction to GPS 2 2 0 3
Prerequisites: None
Corequisites: None
This course provides an overview of Global Positioning Systems (GPS). Topics include the theory, implementation, and operations of GPS, as well as alternate data source remote sensing. Upon completion, students should be able to demonstrate an understanding of the fundamentals of GPS.

GRA 255 Image Manipulation I 1 3 0 2
Prerequisites: GRA 151 or GRD 151
Corequisites: None
This course covers applications associated with electronic image manipulation, including color correction, color separation, special effects, and image conversion. Topics include image-capturing hardware, image-processing software, and output options. Upon completion, students should be able to utilize hardware and software to acquire, manipulate, and output images to satisfy design and production.

GRD 110 Typography I 2 2 0 3
Prerequisites: None
Corequisites: None
This course introduces the history and mechanics of type and its application to layout and design. Topics include typographic fundamentals, anatomy, measurements, composition, identification, and terminology. Upon completion, students should be able to demonstrate proficiency in design application, analysis, specification, and creation of typographic elements.

GRD 111 Typography II 2 2 0 3
Prerequisites: RED 090, GRD 110
Corequisites: None
This course is a continuation of GRD 110. Emphasis is placed on solving challenging typographic problems. Upon completion, students should be able to understand and demonstrate advanced typographic applications.

GRD 117 Design Career Exploration 2 0 0 2
Prerequisites: None
Corequisites: None
This course covers opportunities in the graphic design field and employment requirements. Topics include evaluation of career choices, operations, structure of advertising and graphic design businesses, and related business issues. Upon completion,
This course covers complex design problems utilizing various techniques. Emphasis is placed on developing the use of graphic design principles, media applications, spatial considerations, drawing styles, and approaches. Upon completion, students should be able to show competence and proficiency in finished works. Students should possess a basic drawing ability to successfully complete drawings at the college level.

**GRD 131 Illustration I**  
Prerequisites: RED 090, and ART 131, DES 125, or GRD 121  
Corequisites: None  
This course introduces the application of rendering techniques to create illustrations. Emphasis is placed on controlling various media, methods, surfaces, design problems, and the appropriate media selection process. Upon completion, students should be able to produce quality illustrations from conception through finished artwork.

**GRD 141 Graphic Design I**  
Prerequisites: RED 090  
Corequisites: None  
This course introduces the conceptualization process used in visual problem solving. Emphasis is placed on learning the principles of design and on the manipulation and organization of elements. Upon completion, students should be able to apply design principles and visual elements to projects.

**GRD 142 Graphic Design II**  
Prerequisites: ART 121, DES 135, or GRD 141  
Corequisites: None  
This course covers the application of visual elements and design principles in advertising and graphic design. Topics include creation of various designs, such as logos, advertisements, posters, outdoor advertising, and publication design. Upon completion, students should be able to effectively apply design principles and visual elements to projects.

**GRD 151 Computer Design Basics**  
Prerequisites: RED 090  
Corequisites: None  
This course covers designing and drawing with various types of software applications for advertising and graphic design. Emphasis is placed on creative and imaginative use of space, shapes, value, texture, color, and typography to provide effective solutions to advertising and graphic design problems. Upon completion, students should be able to use the computer as a creative tool.

**GRD 152 Computer Design Techniques I**  
Prerequisites: GRD 151, RED 090  
Corequisites: None  
This course covers complex design problems utilizing various design and drawing software applications. Topics include the expressive use of typography, image, and organization to communicate a message. Upon completion, students should be able to use appropriate computer software to professionally present their work.

**GRD 153 Computer Design Techniques II**  
Prerequisites: GRD 151, GRD 152, and RED 090  
Corequisites: None  
This course covers advanced theories and practices in the field of computer design. Emphasis is placed on advanced use of color palettes, layers, and paths. Upon completion, students should be able to creatively produce designs and articulate their rationale. This course is a composite using GRD 110, GRD 151, and GRD 152 problems.

**GRD 160 Photo Fundamentals I**  
Prerequisites: None  
Corequisites: None  
This course introduces basic camera operations, roll film processing, and photographic print production. Topics include contrast, depth-of-field, subject composition, enlarger operation, and density control. Upon completion, students should be able to produce photographic prints with acceptable density values and quality.

**GRD 161 Photo Fundamentals II**  
Prerequisites: GRD 160  
Corequisites: None  
This course is a continuation of GRD 160. Topics include conversions, toning, color, specialized equipment, lighting, processing, and other methods and materials. Upon completion, students should be able to demonstrate proficiency in producing photographic prints.

**GRD 170 Exhibit Design**  
Prerequisites: GRD 141  
Corequisites: None  
This course introduces basic studio problems in three-dimensional visual design. Emphasis is placed on the structural elements and organizational principles as applied to mass and space. Upon completion, students should be able to apply three-dimensional design concepts in both exhibit designs and commercial displays.

**GRD 175 3-D Animation Design**  
Prerequisites: RED 090, and GRD 151 or GRA 151  
Corequisites: None  
This course explores three-dimensional animation design and production. Emphasis is placed on developing essential skills and techniques using three-dimensional animation software from conceptualization to completion including design, illustration, color, spatial depth, and movement. Upon completion, students should be able to produce animation sequences for computer-related presentations.

**GRD 193 Selected Topics in Advertising and Graphic Design**  
Prerequisites: None  
Corequisites: None  
This course provides an opportunity to explore areas of current interest in Advertising and Graphic Design. Emphasis is placed on the development of critical listening skills and the presentation of selected topic issues. Upon completion, students should be able to critically analyze issues and establish informed opinions. This is an advanced design course focusing on the principles of digital production and design projects.

**GRD 198 Seminar in Advertising and Graphic Design**  
Prerequisites: Varies, based on topic  
Corequisites: None  
This course provides an opportunity to explore areas of current interest in Advertising and Graphic Design. Emphasis is placed on subject matter appropriate to advertising and graphic designing.
This course covers the creative manipulation of images utilizing digital media. Topics include the aesthetic analysis of visual imagery as well as the legalities of manipulating images. Upon completion, students should be able to utilize software applications to creatively manipulate and illustratively build digital images that accomplish design objectives.

**GRD 265 Digital Print Production**  
Prerequisites: RED 070, and GRD 152 or GRA 151  
Corequisites: None  
This course covers preparation of digital files for output and reproduction. Emphasis is placed on output options, separations, color proofing, and cost and design considerations. Upon completion, students should be able to prepare files and select appropriate output methods for design solutions.

**GRD 280 Portfolio Design**  
Prerequisites: GRD 142, RED 090; and GRD 152 or GRA 152  
Corequisites: None  
This course covers the organization and presentation of a design/advertising or graphic art portfolio and appropriate related materials. Emphasis is placed on development and evaluation of the portfolio, design and production of a résumé and self-promotional materials, and interview techniques. Upon completion, students should be able to present an effective portfolio and related self-promotional materials.

**GRD 281 Design of Advertising**  
Prerequisites: RED 090  
Corequisites: None  
This course explores the origins, roles, scope, forms, and development of advertising. Emphasis is placed on advertising development from idea through production and the interrelationship of marketing to types of advertising, media, and organizational structure. Upon completion, students should be able to demonstrate an understanding of the complexities and relationships involved in advertising design.

**GRD 282 Advertising Copywriting**  
Prerequisites: ENG 111 or ENG 110; GRD 110 or GRD 151  
Corequisites: None  
This course covers copywriting for print, electronic, and broadcast advertising and promotion. Topics include advertising strategies, proposals, headlines, slogans, and text copy for various types of advertising. Upon completion, students should be able to write and articulate advertising proposals and understand the ethical and regulatory environment for advertising.

**GRD 285 Client/Media Relations**  
Prerequisites: GRD 142 and GRA 121 or GRA 152 or GRD 152  
Corequisites: None  
This course covers media pricing, scheduling, and business ethics. Emphasis is placed on communication with clients and determination of clients' advertising needs. Upon completion, students should be able to use professional communication skills to effectively orchestrate client/media relationships.

**GRD 292 Selected Topics in Advertising and Graphic Design**  
Prerequisites: GRD-152  
Corequisites: None  
This course provides an opportunity to explore areas of current interest in Advertising and Graphic Design. Emphasis is placed on subject matter appropriate to advertising and graphic designing. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

**GRD 293 Selected Topics in Advertising and Graphic Design**  
Prerequisites: Varies, based on topics  
Corequisites: None  
This course provides an opportunity to explore areas of current interest in Advertising and Graphic Design. Emphasis is placed on subject matter appropriate to advertising and graphic designing. Upon completion, students should be able to demonstrate an understanding of the specific area of study.
### COURSE DESCRIPTIONS

#### H

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Hours Per Week</th>
<th>Class</th>
<th>Lab</th>
<th>Clinical</th>
<th>Credit</th>
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<tbody>
<tr>
<td><strong>HEA 110 Personal Health/ Wellness</strong></td>
<td>6</td>
<td>3</td>
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<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Prerequisites: None</td>
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<td>Corequisites: None</td>
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<tr>
<td>This course provides an introduction to basic personal health and wellness. Emphasis is placed on current health issues such as nutrition, mental health, and fitness. Upon completion, students should be able to demonstrate an understanding of the factors necessary to the maintenance of health and wellness. This course will include practical, real-life applications to the material presented in the text that encourage students to apply the material to their own lives.</td>
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</table>

| **HEA 112 First Aid and CPR** | 2              | 1     | 2   | 0        | 2      |
| Prerequisites: None          |                |       |     |          |        |
| Corequisites: None           |                |       |     |          |        |
| This course introduces the basics of emergency first aid treatment. Topics include rescue breathing, CPR, first aid for choking and bleeding, and other first aid procedures. Upon completion, students should be able to demonstrate skills in providing emergency care for the sick and injured until medical help can be obtained. |                |       |     |          |        |

| **HET 110 Diesel Engines** | 6              | 3     | 9   | 0        | 6      |
| Prerequisites: None          |                |       |     |          |        |
| Corequisites: None           |                |       |     |          |        |
| This course introduces theory, design, terminology, and operating adjustments for diesel engines. Emphasis is placed on safety, theory of operation, inspection, measuring, and rebuilding diesel engines according to factory specifications. Upon completion, students should be able to measure, diagnose problems, and repair diesel engines. |                |       |     |          |        |

| **HET 110a Diesel Engines-Part 1** | 4              | 2     | 6   | 0        | 4      |
| Prerequisites: None          |                |       |     |          |        |
| Corequisites: None           |                |       |     |          |        |
| This course is the first half of HET 110 (see the description for HET 110 above). |                |       |     |          |        |

| **HET 110b Diesel Engines-Part 2** | 2              | 1     | 3   | 0        | 2      |
| Prerequisites: HET 110a        |                |       |     |          |        |
| Corequisites: None             |                |       |     |          |        |
| This course is the second half of HET 110 (see the description for HET 110 above). |                |       |     |          |        |

| **HET 112 Diesel Electrical Systems** | 5              | 3     | 6   | 0        | 5      |
| Prerequisites: None            |                |       |     |          |        |
| Corequisites: None             |                |       |     |          |        |
| This course introduces electrical theory and applications as they relate to diesel powered equipment. Topics include lighting, accessories, safety, starting, charging, instrumentation, and gauges. Upon completion, students should be able to follow schematics to identify, repair, and test electrical circuits and components. |                |       |     |          |        |

| **HET 114 Power Trains** | 5              | 3     | 6   | 0        | 5      |
| Prerequisites: None          |                |       |     |          |        |
| Corequisites: None           |                |       |     |          |        |
| This course introduces power transmission devices. Topics include function and operation of gears, chains, clutches, planetary gears, drive lines, differentials, and transmissions. Upon completion, students should be able to identify, research specifications, repair, and adjust power train components. |                |       |     |          |        |

| **HET 114a Power Trans-Part 1** | 3              | 2     | 0   | 3        | 3      |
| Prerequisites: None          |                |       |     |          |        |
| Corequisites: None           |                |       |     |          |        |
| This course is the first half of HET 114 (see the description for HET 114 above). |                |       |     |          |        |

| **HET 114b Power Trans-Part 2** | 2              | 1     | 0   | 3        | 2      |
| Prerequisites: None          |                |       |     |          |        |
| Corequisites: None           |                |       |     |          |        |
| This course is the second half of HET 114 (see the description for HET 114 above). |                |       |     |          |        |

| **HET 115 Electronic Engines** | 3              | 2     | 3   | 0        | 3      |
| Prerequisites: None          |                |       |     |          |        |
| Corequisites: None           |                |       |     |          |        |
| This course introduces the principles of electronically controlled diesel engines. Emphasis is placed on testing and adjusting diesel engines in accordance with manufacturers’ specifications. Upon completion, students should be able to diagnose, test, and calibrate electronically controlled diesel engines. |                |       |     |          |        |

| **HET 116 Air Conditioning/Diesel Equipment** | 2              | 1     | 2   | 0        | 2      |
| Prerequisites: None          |                |       |     |          |        |
| Corequisites: None           |                |       |     |          |        |
| This course provides a study of the design, theory, and operation of heating and air conditioning systems in newer models of medium and heavy duty vehicles. Topics include component function, refrigerant recovery, and environmental regulations. Upon completion, students should be able to use proper techniques and equipment to diagnose and repair heating/air-conditioning systems according to industry standards. |                |       |     |          |        |

| **HET 120 Intro to Mobile Equipment** | 2              | 1     | 0   | 2        | 2      |
| Prerequisites: None          |                |       |     |          |        |
| Corequisites: None           |                |       |     |          |        |
| This course introduces the functions and systems of modern medium and heavy duty vehicles. Topics include use of technical manuals, tools and equipment, record keeping, material safety data sheets, and work habit safety. Upon completion, students should be able to use technical manuals, tools, equipment, and material safety data sheets. |                |       |     |          |        |

| **HET 128 Medium/Heavy Duty Tune Up** | 2              | 1     | 0   | 2        | 2      |
| Prerequisites: None          |                |       |     |          |        |
| Corequisites: HET 110        |                |       |     |          |        |
| This course introduces tune-up and troubleshooting according to manufacturers’ specifications. Topics include troubleshooting engine systems, tune-up procedures, and use and care of special test tools and equipment. Upon completion, students should be able to troubleshoot, diagnose, and repair engines and components using appropriate diagnostic equipment. |                |       |     |          |        |

| **HET 134 Mechanical Fuel Injection** | 3              | 2     | 2   | 0        | 3      |
| Prerequisites: None          |                |       |     |          |        |
| Corequisites: None           |                |       |     |          |        |
| This course introduces the principles of mechanical fuel injection. Emphasis is placed on test equipment, component functions, and theory. Upon completion, students should be able to diagnose, service, and repair fuel systems and governors. |                |       |     |          |        |
### Course Descriptions

**HET 192 Selected Topics in Heavy Equipment and Transport Technology**

- **Prerequisites:** Varies, based on topic.
- **Corequisites:** None

This course provides an opportunity to explore areas of current interest in heavy equipment and transport technology. Emphasis is placed on subject matter appropriate to heavy equipment. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

**HET 211 Ag Harvesting Equipment**

- **Prerequisites:** None
- **Corequisites:** None

This course covers the theory, design, principles of operation and adjustment, and troubleshooting and repair of harvesting equipment including combines and hay and forage equipment. Emphasis is placed on operating and troubleshooting harvest equipment hydraulics and monitoring equipment. Upon completion, students should be able to diagnose, adjust, or repair new or used harvesting equipment in accordance with manufacturers' specifications. This course is a unique concentration requirement of the Agricultural Systems concentration in the Heavy Equipment and Transport Technology program.

**HET 217 Tractor Performance**

- **Prerequisites:** None
- **Corequisites:** None

This course covers procedures for attaining optimum performance of agricultural tractors. Emphasis is placed on problem solving using dynamometers, test procedures, and safety. Upon completion, students should be able to use test equipment to diagnose engines and drive components and adjust tractors to achieve optimum performance. This course is a unique concentration requirement of the Agricultural Systems concentration in the Heavy Equipment and Transport Technology program.

**HET 231 Med/Heavy Duty Brake Sys**

- **Prerequisites:** None
- **Corequisites:** None

This course covers the theory and repair of braking systems used in medium and heavy duty vehicles. Topics include air, hydraulic, and ABS system diagnosis and repair. Upon completion, students should be able to troubleshoot, adjust, and repair braking systems on medium and heavy duty vehicles.

**HET 232 Med/Hvy Duty Brake Sys Lab**

- **Prerequisites:** None
- **Corequisites:** HET 231

This course provides a laboratory setting to enhance the skills for troubleshooting, adjusting, and repairing brake systems on medium and heavy duty vehicles. Emphasis is placed on practical experiences that enhance the topics presented in HET 231. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in HET 231.

**HET 233 Suspension and Steering**

- **Prerequisites:** None
- **Corequisites:** None

This course introduces the theory and principles of medium and heavy duty steering and suspension systems. Topics include wheel and tire problems, frame members, fifth wheel, bearings, and coupling systems. Upon completion, students should be able to troubleshoot, adjust, and repair suspension and steering components on medium and heavy duty vehicles.

**HIS 111 World Civilizations I**

- **Prerequisites:** ENG 090, and RED 090, or placement
- **Corequisites:** None

This course introduces world history from the dawn of civilization to the early modern era. Topics include Eurasian, African, American, and Greco-Roman civilizations and Christian, Islamic and Byzantine cultures. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in pre-modern world civilizations. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

**HIS 112 World Civilizations II**

- **Prerequisites:** ENG 090, RED 090, or placement
- **Corequisites:** None

This course introduces world history from the early modern era to the present. Topics include the cultures of Africa, Europe, India, China, Japan, and the Americas. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in modern world civilizations. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

**HIS 117 History of Religions**

- **Prerequisites:** ENG 090 and RED 090, or placement
- **Corequisites:** None

This course surveys the historical development of the world’s major religions. Topics include systems of belief and religious practice, polytheism, monotheism, and current religious movements. Upon completion, students should be able to analyze the world’s major religious traditions. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

**HIS 121 Western Civilization I**

- **Prerequisites:** ENG 090 and RED 090, or placement
- **Corequisites:** None

This course introduces western civilization from pre-history to the early modern era. Topics include ancient Greece, Rome, and Christian institutions of the Middle Ages and the emergence of national monarchies in western Europe. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in early western civilization. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences. This course is also available through the Virtual Learning Community (VLC).

**HIS 122 Western Civilization II**

- **Prerequisites:** ENG 090 and RED 090, or placement
- **Corequisites:** None

This course introduces western civilization from pre-history to the early modern era. Topics include ancient Greece, Rome, and Christian institutions of the Middle Ages and the emergence of national monarchies in western Europe. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in early western civilization. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences. This course is also available through the Virtual Learning Community (VLC).
COURSE DESCRIPTIONS

HIS 131 American History I
Prerequisites: ENG 090, RED 090, or placement
Corequisites: None
This course is a survey of American history from pre-history through the Civil War era. Topics include the migrations to the Americas, the colonial and revolutionary periods, the development of the Republic, and the Civil War. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in early American history.

HIS 132 American History II
Prerequisites: ENG 090, RED 090, or placement
Corequisites: None
This course is a survey of American history from the Civil War era to the present. Topics include industrialization, immigration, the Great Depression, the major American wars, the Cold War, and social conflict. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in American history since the Civil War.

HIS 161 Science and Technology
Prerequisites: ENG 090 and RED 090, or placement
Corequisites: None
This course examines the history of science and technology from pre-history to the present. Topics include the origins, impact, and consequences of scientific and technological developments. Upon completion, students should be able to analyze significant developments in the history of science and technology. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 162 Women and History
Prerequisites: ENG 090 and RED 090, or placement
Corequisites: None
This course surveys the experience of women in historical perspective. Topics include the experiences and contributions of women in culture, politics, economics, science, and religion. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural contributions of women in history. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 167 The Vietnam War
Prerequisites: ENG 090 and RED 090, or placement
Corequisites: None
This course covers the American political and military involvement in Vietnam from 1944 to 1975. Topics include the French colonial policy, Vietnamese nationalism, the war with France, American involvement, and resolution of the conflict. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments that influenced the Vietnam War. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 216 Twentieth-Century Europe
Prerequisites: HIS 122
Corequisites: None
This course provides an in-depth survey of twentieth-century Europe. Topics include World Wars I and II, and political, social, and cultural movements of the twentieth century. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in twentieth-century Europe. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 221 African-American History
Prerequisites: ENG 090 and RED 090, or placement
Corequisites: None
This course covers African-American history from the Colonial period to the present. Topics include African origins, the slave trade, the Civil War, Reconstruction, the Jim Crow era, the civil rights movement, and contributions of African Americans. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in the history of African Americans. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 222 African-American Hist I
Prerequisites: None
Corequisites: None
This course covers African American history through the Civil War period. Topics include African origins, the nature of slavery, African-American participation in the American Revolution, abolitionism, and the emergence of a distinct African-American culture. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in early African-American history. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement. This course is also available through the Virtual Learning Community (VLC).

HIS 223 African-American Hist II
Prerequisites: None
Corequisites: None
This course covers African American history from the Civil War to the present. Topics include Reconstruction, the Jim Crow era, urbanization, the Harlem Renaissance, the Civil Rights movement, and the philosophies of major African-American leaders. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in African-American history since the Civil War. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 226 The Civil War
Prerequisites: ENG 090 and RED 090, or placement
Corequisites: None
This course examines the social, political, economic, and ideological forces that led to the Civil War and Reconstruction. Topics include regional conflicts and sectionalism, dissolution of the Union, military campaigns, and the War's socio-economic impact, aftermath, and consequences. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in the United States during the era of the Civil War. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 231 Recent American History
Prerequisites: ENG 090 and RED 090
Corequisites: None
This course is a study of American society from the post-Depression era to the present. Topics include World War II, the Cold War, social unrest, the Vietnam War, the Great Society, and current political trends. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in recent America. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.
HIS 236 North Carolina History 3 0 0 3
Prerequisites: ENG 090 and RED 090, or placement
Corequisites: None
This course is a study of geographical, political, economic, and social conditions existing in North Carolina from America's discovery to the present. Topics include native and immigrant backgrounds; colonial, antebellum, and Reconstruction periods; party politics; race relations; and the transition from an agrarian to an industrial economy. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in North Carolina. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 242 Russian History from 1917 3 0 0 3
Prerequisites: ENG 090 and RED 090
Corequisites: None
This course covers the development of Russia from 1917 to the present. Topics include the Russian Revolution, Stalinism, Marxist foreign policy, the world wars, the Cold War, and the present. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in Russia since 1917. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 251 English History I 3 0 0 3
Prerequisites: ENG 090 and RED 090, or placement
Corequisites: None
This course traces the political, social, and economic development of England from the Elizabethan period. Topics include the early development of England, the Norman conquest, medieval society, and Elizabethan England. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in early English history. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 252 English History II 3 0 0 3
Prerequisites: ENG 090 and RED 090, or placement
Corequisites: None
This course traces the political, social, and economic development of England from the Elizabethan period to the present. Topics include imperialism, industrial development, civil wars, and world wars. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments in English history from Elizabethan England to the present. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HIS 271 The French Revolution Era 3 0 0 3
Prerequisites: ENG 090 and RED 090
Corequisites: None
This course traces the causes and effects of the French Revolution. Topics include the Enlightenment; Jacobins; Reign of Terror; Napoleon's republic, empire, and wars; and the French Revolution's impact upon world history. Upon completion, students should be able to analyze significant political, socioeconomic, and cultural developments during the French revolutionary era. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

HOR 268 Advanced Propagation 3 3 0 4
Prerequisites: None
Corequisites: None
This course covers applied production techniques for asexual and sexual plant propagation. Emphasis is placed on the major accepted methods of asexual propagation and sexual propagation of woody ornamental plants, with evaluation of all initiated propagation. Upon completion, students should be able to successfully propagate a variety of plant materials utilizing methods covered in the course.

HPC 110 Introduction To HPC Architecture 2 2 0 3
Prerequisites: RED 090, MAT 070
Corequisites: None
This course introduces students to the terminology, hardware performance issues, programming models and software tools available for High Performance Computing (HPC). Topics include a survey of HPC concepts and terminology, HPC operating systems, memory models and architecture, PC clusters, highly integrated supercomputers and high-speed communications. Upon completion, students should be able to build a PC cluster.

HPC 130 Introduction to HPC Communication Technology 2 2 0 3
Prerequisites: None
Corequisites: None
This course introduces students to the communications aspect of a HPC system. Topics include multiprocessor networks, optimization techniques, load balancing, bandwidths, data communications and buffer size optimization. Upon completion, students should be able to discuss and evaluate high-speed communication techniques and strategies in HPC Systems.

HPC 140 Introduction to HPC Architecture 2 2 0 3
Prerequisites: RED 090, MAT 070
Corequisites: None
This course introduces students to hardware architecture for the High Performance Computing environment (HPC). Topics include distributed and shared memory systems, hardware design issues, vector parallel machines and communication issues of remote massively parallel machines and clusters. Upon completion, students should be able to discuss and evaluate architectural design issues in a HPC system.

HPC 150 HPC Networking Technology 2 2 0 3
Prerequisites: HPC 110 or NET 110
Corequisites: None
This course introduces students to the networking topologies in a HPC environment. Topics include multiprocessor networks, network interface, testing methods and prototype development for high-speed network technologies, interoperability among high-speed network products and virtual networks. Upon completion, students should be able to discuss network issues for a HPC environment.

HPC 152 HPC Development Tools 2 2 0 3
Prerequisites: HPC 110
Corequisites: None
This course introduces students to performance analysis tools to measure, predict, locate, and analyze bottleneck situations in parallel and cluster application. Topics include system software, parallel software life-cycle issues and a review of parallel development options in a HPC environment. Upon completion, students should be able to discuss various HPC development tools and their appropriate usage in the HPC environment.
HPC 162 HPC Security 2 2 0 3
Prerequisites: HPC 110
Corequisites: None
This course provides an overview of distributed computer security issues as related to HPC services. Topics include cryptographic technologies, protocols used to construct secure and private systems, internet service security mechanisms, firewalls, auditing, and related topics. Upon completion, students should be able to implement security procedures for a HPC system.

HPC 170 Introduction to HPC Data Mining 2 2 0 3
Prerequisites: HPC 110
Corequisites: None
This course provides an introduction to data intensive computing on HPC machines. Topics include distributed mass storage, efficient retrieval techniques, data management tools, appropriate data structures and case studies. Upon completion, students should be able to define and discuss performance evaluation of a database in a HPC environment.

HPC 172 HPC Applications 2 2 0 3
Prerequisites: HPC 110
Corequisites: None
This course introduces students to currently available HPC applications highlighting software approaches and hardware platforms. Topics include a review of successfully deployed HPC systems in industry and research environments and decision-making techniques when selecting HPC. Upon completion, students should be able to discuss, in oral as well as written form, current HPC applications highlighting strengths and weaknesses.

HPC 180 Introduction to Cluster Computing 2 2 0 3
Prerequisites: MAT 070, RED 090
Corequisites: None
This course provides students with the current and emerging trends in cluster computing. Topics include current and emerging technologies in system architecture, networking, software environments, configuration, management tools, application libraries and utilities in a cluster environment. Upon completion, students should be able to discuss and illustrate fundamental cluster technology approaches using examples from engineering, scientific and/or data intensive applications.

HPC 193 Selected Topics in HPC 3 0 0 3
Prerequisites: None
Corequisites: None
This course provides an opportunity to explore areas of current interest in High Performance Computing. Emphasis is placed on the subject matter appropriate to High Performance Computing. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

HPC 198 Seminar in HPC 3 0 0 3
Prerequisites: None
Corequisites: None
This course provides an opportunity to explore areas of current interest in High Performance Computing. Emphasis is placed on the development of critical listening skills and the presentation of seminar issues. Upon completion, students should be able to critically analyze issues and establish informed opinions.

HPC 230 Advanced HPC Communication 2 2 0 3
Prerequisites: HPC 130
Corequisites: None
This course introduces students to advanced communication and networking topics in a HPC environment. Topics include switch queuing strategy, performance modeling, review of current high-speed communication networks and available tools and libraries for improving high-speed communications. Upon completion, students should be able to design and defend a reliable high-speed communication model for a HPC environment.

HPC 240 Advanced HPC Architecture 2 2 0 3
Prerequisites: HPC 140
Corequisites: None
This course introduces students to advanced hardware architecture for a (HPC) system. Topics include topology of parallel computer architecture, arithmetic pipeline design, array machines, distributed architecture, multi-processor computers, SIMD, MIMD machines and current recent parallel machines. Upon completion, students should be able to design and discuss a user specified HPC architecture system.

HPC 245 Grid Technologies 2 2 0 3
Prerequisites: HPC 110
Corequisites: None
This course introduces students to Grid technologies and distributed computing architecture. Topics include distributed security architecture, data formats, distributed file systems, access control of shared resources and multi-institutional collaborative environments. Upon completion, students should be able to discuss, in oral and written form, issues related to creating a scalable, distributed and secure HPC Grid environment.

HPC 262 Advanced HPC Security 2 2 0 3
Prerequisites: HPC 162
Corequisites: None
This course introduces students to advanced security topics and various security applications. Topics include authentication for distributed systems, authorization models, developing secure distributed operating systems and databases, distributed intrusion detection, advanced cryptographic algorithms. Upon completion, students should be able to design a secure distributed system in a HPC environment.

HPC 264 HPC Security Management 3 0 0 3
Prerequisites: HPC 162
Corequisites: None
This course is designed to provide students with a review of access and security management practices in a HPC environment. Topics include HPC disaster recovery, business continuity, redundancy and reliability policies, HPC hardware, software and network security models and physical security. Upon completion, students should be able to prepare a HPC disaster recovery continuity plan, and review security practices in every area of the HPC environment.

HPC 270 Advanced HPC Data Mining 2 2 0 3
Prerequisites: HPC 170
Corequisites: None
This course introduces students to advanced data mining and database design techniques in a HPC environment. Topics include data retrieval algorithms, text mining techniques, document clustering, query clusters, mathematical models, data fusion and software design for information retrieval. Upon completion, students should be able to design and implement a database using data mining techniques in a HPC environment.
### COURSE DESCRIPTIONS

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<th>Code</th>
<th>Title</th>
<th>Units</th>
<th>Corequisites</th>
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<td>Emerging HPC Technologies</td>
<td>3</td>
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<td>technologies in the field of High Performance</td>
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<td>Computing (HPC). Emphasis is placed on the new</td>
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<td>design techniques and related issues in cluster</td>
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<td>deployed cluster systems used in commerce,</td>
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<td>completion, students should be able to</td>
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<td>summarize findings and draw conclusions about</td>
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<td>current cluster technology, discuss emerging</td>
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<td></td>
<td>technology trends and clusters of the future.</td>
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<td>HPC 285</td>
<td>Systems Analysis and Design</td>
<td>3</td>
<td>None</td>
<td>HPC 110</td>
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<td></td>
<td>This course provides an opportunity for students</td>
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<td>to complete a significant HPC systems project</td>
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<td>with minimal instructor support. Emphasis is</td>
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<td>placed on project definition, documentation,</td>
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<td>testing, and presentation. Upon completion,</td>
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<td>students should be able to complete a HPC project.</td>
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<tr>
<td>HPC 293</td>
<td>Selected Topics in Bioinformatics Capstone</td>
<td>2</td>
<td>None</td>
<td>HPC 272 and NET 145</td>
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<tr>
<td></td>
<td>The capstone project is a culminating experience</td>
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<td>to the Bioinformatics Computing certificate</td>
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<td>program. It represents the ability to formulate</td>
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<td>a project and implement it from start to finish</td>
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<td>using a combination of conceptual, technical</td>
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<td>and applied knowledge. The project will</td>
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<td>demonstrate an understanding of the design,</td>
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<td>implementation and use of web accessible</td>
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<td>biological databases.</td>
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<td>HPC 298</td>
<td>Seminar in HPC</td>
<td>3</td>
<td>None</td>
<td>MAT 070, RED 090</td>
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<td></td>
<td>This course provides an opportunity to explore</td>
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<td></td>
<td>areas of current interest in High Performance</td>
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<td>Computing. Emphasis is placed on the development</td>
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<td>of critical listening skills and the presentation</td>
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<td>of seminar issues. Upon completion,</td>
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<td>students should be able to critically analyze</td>
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<td>issues and establish informed opinions.</td>
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<td>HRM 110</td>
<td>Introduction to Hospitality</td>
<td>2</td>
<td>None</td>
<td>RED 090, MAT 060</td>
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<td></td>
<td>This course covers the growth and progress of</td>
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<td></td>
<td>the hospitality industry. Topics include</td>
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<td></td>
<td>financing, hotels, restaurants, and clubs.</td>
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<td>Upon completion, students should be able to</td>
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<td></td>
<td>demonstrate an understanding of the background,</td>
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<td>context, and career opportunities that exist in</td>
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<td></td>
<td>the hospitality industry.</td>
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<td>HRM 115</td>
<td>Housekeeping</td>
<td>3</td>
<td>None</td>
<td>ENG 090, MAT 070, RED 090</td>
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<td></td>
<td>This course covers the scope, responsibilities,</td>
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<td></td>
<td>communications, terminology, materials, and</td>
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<td></td>
<td>concerns specific to hotel housekeeping.</td>
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<td></td>
<td>Topics include management and supervision of</td>
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<td>housekeeping staff in the proper cleaning and</td>
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<td>sanitation of rooms and public areas, budgeting,</td>
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<td>purchasing, security, and inventory control.</td>
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<td>Upon completion, students should be able to</td>
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<td></td>
<td>understand and apply the principles of</td>
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<td></td>
<td>organization and management of a housekeeping</td>
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<td>HRM 120</td>
<td>Front Office Procedures</td>
<td>3</td>
<td>None</td>
<td>MAT 060, RED 090</td>
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<td>This course provides a systematic approach to</td>
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<td>hotel front office procedures. Topics include</td>
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<td>reservations, registration, guest satisfaction,</td>
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<td>occupancy and rate management, security,</td>
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<td>interdepartmental communications, and related</td>
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<td>guest services. Upon completion,</td>
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<td>students should be able to demonstrate a basic</td>
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<td>understanding of current front office operating</td>
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<td>systems, including efficient and courteous guest</td>
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<td>services.</td>
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<td>HRM 140</td>
<td>Hospitality Tourism Law</td>
<td>3</td>
<td>None</td>
<td>MAT 060 and RED 090</td>
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<td></td>
<td>This course covers the rights and responsibilities</td>
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<td>that the law grants to or imposes upon the</td>
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<td>hospitality industry. Topics include federal and</td>
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<td>state regulations, historical and current</td>
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<td>practices, safety and security, risk management,</td>
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<td>loss prevention, torts, and contracts. Upon</td>
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<td>completion, students should be able to</td>
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<td></td>
<td>demonstrate an understanding of the legal</td>
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<td>system to prevent or minimize organizational</td>
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<td>HRM 145</td>
<td>Hospitality Supervision</td>
<td>3</td>
<td>None</td>
<td>MAT 060, RED 090</td>
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<td></td>
<td>This course covers principles of supervision as</td>
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<td></td>
<td>they apply to the hospitality industry. Topics</td>
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<td>include recruitment, selection, orientation,</td>
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<td>training, evaluation, and leadership skills.</td>
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<td>Upon completion, students should be able to</td>
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<td></td>
<td>understand and apply basic supervisory skills</td>
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<td></td>
<td>unique to the hospitality and service industry.</td>
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<td>HRM 193</td>
<td>Selected Topics in Hotel and Restaurant</td>
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<td>None</td>
<td>CUL 140</td>
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<td>Management</td>
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<td>This course provides an opportunity to explore</td>
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<td>areas of current interest in Hotel and Restaurant</td>
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<td></td>
<td>Management. Emphasis is placed on subject matter</td>
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<td>appropriate to hotel and restaurant management.</td>
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<td>Upon completion, students should be able to</td>
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<td>demonstrate an understanding of the specific</td>
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<td>area of study.</td>
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<td>HRM 210</td>
<td>Meetings and Conventions</td>
<td>3</td>
<td>None</td>
<td>MAT 060, RED 090</td>
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<td></td>
<td>This course introduces organization, arrangement,</td>
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<td>and operation of conventions, trade shows,</td>
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<td>professional meetings, and food functions.</td>
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<td>Emphasis is placed on the methods of marketing,</td>
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<td>selling, and servicing conventions and trade</td>
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<td>shows and the division of administrative</td>
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<td>responsibilities in their operation. Upon</td>
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<td>completion, students should be able to</td>
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<td>describe and apply the principles of management</td>
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<td>to multi-function, multi-day conferences and</td>
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<td>events.</td>
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<td>HRM 215</td>
<td>Restaurant Management</td>
<td>3</td>
<td>None</td>
<td>CUL 135, CUL 135A</td>
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<td>This course provides an overview of the various</td>
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<td>challenges and responsibilities encountered in</td>
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<td>managing a food and beverage operation. Topics</td>
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<td>include planning, administration, organization,</td>
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<td>accounting, marketing, and human resources from</td>
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<td>an integrated approach.</td>
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managerial viewpoint. Upon completion, students should be able to demonstrate an understanding of the operation of a restaurant.

**HRM 220 Food & Beverage Controls**
Prerequisites: ACC 175, MAT 110 or MAT 115
Corequisites: HRM 220A
This course introduces controls and accounting procedures used in the hospitality industry. Topics include analysis of financial statements, reports, and costs. Upon completion, students should be able to understand and apply food, beverage, and labor cost control systems.

**HRM 220A Food & Beverage Controls Lab**
Prerequisites: ACC 175, MAT 110 or MAT 115
Corequisites: HRM 220
This course is a laboratory to accompany HRM 220. Emphasis is placed on practical computer applications of food and beverage control procedures. Upon completion, students should be able to demonstrate proficiency in computer-based control applications.

**HRM 225 Beverage Management**
Prerequisites: RED 090
Corequisites: None
This course introduces the management of beverage operations in a hospitality operation. Topics include history, service, procurement, storage, and control of wines, fermented and distilled beverages, sparkling waters, coffees, and teas. Upon completion, students should be able to demonstrate knowledge of the beverages consumed in a hospitality operation.

**HRM 240 Hospitality Marketing**
Prerequisites: HRM 110
Corequisites: None
This course covers planning, organizing, directing, and analyzing the results of marketing programs in the hospitality industry. Emphasis is placed on market segmentation and analysis, product and image development, sales planning, advertising, public relations, and collateral materials. Upon completion, students should be able to prepare a marketing plan applicable to the hospitality industry.

**HRM 280 Hospitality Management Problems**
Prerequisites: HRM 110, HRM 120, and HRM 125
Corequisites: HRM 220
This course addresses current global, national, and local concerns and issues in the hospitality industry. Emphasis is placed on problem-solving skills using currently available resources. Upon completion, students should be able to apply hospitality management principles to real challenges facing industry managers.

**HSC 120 CPR**
Prerequisites: None
Corequisites: None
This course covers the basic knowledge and skills for the performance of infant, child, and adult CPR and the management of foreign body airway obstruction. Emphasis is placed on recognition, assessment, and proper management of emergency care. Upon completion, students should be able to perform infant, child, and adult CPR and manage foreign body airway obstructions.

**HSE 110 Introduction to Human Services**
Prerequisites: None
Corequisites: None
This course introduces the human services field, including the history, agencies, roles, and careers. Topics include personal/professional characteristics, diverse populations, community resources, disciplines in the field, systems, ethical standards, and major theoretical and treatment approaches. Upon completion, students should be able to identify the knowledge, skills, and roles of the human services worker.

**HSE 112 Group Process I**
Prerequisites: None
Corequisites: None
This course introduces interpersonal concepts and group dynamics. Emphasis is placed on self-awareness facilitated by experiential learning in small groups with analysis of personal experiences and the behavior of others. Upon completion, students should be able to show competence in identifying and explaining how people are influenced by their interactions in group settings.

**HSE 123 Interviewing Techniques**
Prerequisites: PSY 150
Corequisites: None
This course covers the purpose, structure, focus, and techniques employed in effective interviewing. Emphasis is placed on observing, attending, listening, responding, recording, and summarizing of personal histories with instructor supervision. Upon completion, students should be able to perform the basic interviewing skills needed to function in the helping relationship.

**HSE 125 Counseling**
Prerequisites: PSY 150
Corequisites: None
This course covers the major approaches to psychotherapy and counseling, including theory, characteristics, and techniques. Emphasis is placed on facilitation of self-exploration, problem solving, decision making, and personal growth. Upon completion, students should be able to understand various theories of counseling and demonstrate counseling techniques.

**HSE 127 Conflict Resolution**
Prerequisites: None
Corequisites: None
This course introduces conflict resolution and mediation theory and practice. Emphasis is placed on achieving compromise and a win/win perception. Upon completion, students should be able to demonstrate competence in identifying seemingly dissimilar positions and facilitating agreement.

**HSE 145 Child Abuse and Neglect**
Prerequisites: None
Corequisites: None
This course explores the abused and neglected child, including the nature and dimension of the problem. Emphasis is placed on various types of abuse and neglect, their causes, proper treatment, and reporting laws and procedures. Upon completion, students should be able to identify family intervention and counseling techniques to help parents effectively cope in parent-child conflicts.

**HSE 155 Community Resources Management**
Prerequisites: None
Corequisites: None
This course focuses on the working relationships between human services agencies and the community. Emphasis is placed on...
identification and observation of community resources which contribute to the achievement of the human services mission. Upon completion, students should be able to demonstrate knowledge about mobilizing of community resources, marshaling public support, and determining appropriate sources of funding.

HSE 210 Human Services Issues 2 0 0 2
Prerequisites: None
Corequisites: None
This course covers current issues and trends in the field of human services. Emphasis is placed on contemporary topics with relevance to special issues in a multi-faceted field. Upon completion, students should be able to integrate the knowledge, skills, and experiences gained in classroom and clinical experiences with emerging trends in the field.

HSE 220 Case Management 2 2 0 3
Prerequisites: HSE 110
Corequisites: None
This course covers the variety of tasks associated with professional case management. Topics include treatment planning, needs assessment, referral procedures, and follow-up and integration of services. Upon completion, students should be able to effectively manage the care of the whole person from initial contact through termination of services.

HSE 225 Crisis Intervention 3 0 0 3
Prerequisites: None
Corequisites: None
This course introduces the basic theories and principles of crisis intervention. Emphasis is placed on identifying and demonstrating appropriate and differential techniques for intervening in various crisis situations. Upon completion, students should be able to assess crisis situations and respond appropriately.

HSE 250 Financial Services 2 0 0 2
Prerequisites: None
Corequisites: None
This course introduces those agencies that provide income maintenance casework services. Emphasis is placed on qualifying applicants for a variety of economic assistant programs offered by human services agencies. Upon completion, students should be able to make a factual and objective assessment of a client's economic situation to qualify them for economic assistance.

HUM 110 Technology and Society 3 0 0 3
Prerequisites: ENG 090 and RED 090, or placement
Corequisites: None
This course considers technological change from historical, artistic, and philosophical perspectives and its effect on human needs and concerns. Emphasis is placed on the causes and consequences of technological change. Upon completion, students should be able to critically evaluate the implications of technology. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts. This course is also available through the Virtual Learning Community (VLC).

HUM 115 Critical Thinking 3 0 0 3
Prerequisites: ENG 090, ENG 095, or RED 090, or placement
Corequisites: None
This course introduces the use of critical thinking skills in the context of human conflict. Emphasis is placed on evaluating information, problem solving, approaching cross-cultural perspectives, and resolving controversies and dilemmas. Upon completion, students should be able to demonstrate orally and in writing the use of critical thinking skills in the analysis of appropriate texts. Students will also explore the parameters of selected ethical issues.

HUM 121 The Nature of America 3 0 0 3
Prerequisites: None
Corequisites: None
This course provides an interdisciplinary survey of the American cultural, social, and political experience. Emphasis is placed on the multicultural character of American society, distinctive qualities of various regions, and the American political system. Upon completion, students should be able to analyze significant cultural, social, and political aspects of American life. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 122 Southern Culture 3 0 0 3
Prerequisites: RED 090 and ENG 090
Corequisites: None
This course explores the major qualities that make the South a distinct region. Topics include music, politics, literature, art, religion, race relations, and the role of social class in historical and contemporary contexts. Upon completion, students should be able to identify the characteristics that distinguish Southern culture. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts. This course is also available through the Virtual Learning Community (VLC).

HUM 130 Myth in Human Culture 3 0 0 3
Prerequisites: ENG 090 and RED 090, or placement
Corequisites: None
This course provides an in-depth study of myths and legends. Topics include the varied sources of myths and their influence on the individual and society within diverse cultural contexts. Upon completion, students should be able to demonstrate a general familiarity with myths and a broad-based understanding of the influence of myths and legends on modern culture. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

HUM 160 Introduction to Film 2 2 0 3
Prerequisites: ENG 111
Corequisites: None
This course introduces the fundamental elements of film artistry and 7165 production. Topics include film styles, history, and production techniques, as well as the social values reflected in film art. Upon completion, students should be able to critically analyze the elements covered in relation to selected films.

HUM 161 Advanced Film Studies 2 2 0 3
Prerequisites: HUM 160
Corequisites: None
This course provides an advanced study of film art and production, building on skills learned in HUM 160. Topics include film production techniques, film genres, examination of master directors' styles, and the relation of film to culture. Upon completion, students should be able to recognize and critically analyze advanced elements of film production.

HUM 170 The Holocaust 3 0 0 3
Prerequisites: ENG 090, RED 090, or placement
Corequisites: None
This course provides a survey of the destruction of European Jewry by the Nazis during World War II. Topics include the anti-Semitic ideology, bureaucratic structures, and varying conditions of European occupation and domination under the Third Reich. Upon completion, students should be able to demonstrate an understanding of the historical, social, religious, political, and economic factors which cumulatively resulted in the Holocaust. This course has been approved to satisfy the Comprehensive
Articulation Agreement for transferability as a premajor and/or elective course requirement.

**HUM 211 Humanities I**
Prerequisites: ENG 111
Corequisites: None
This course introduces the humanities as a record in literature, music, art, history, religion, and philosophy of humankind's answers to the fundamental questions of existence. Emphasis is placed on the interconnectedness of various aspects of cultures from ancient through early modern times. Upon completion, students should be able to identify significant figures and cultural contributions of the periods studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**HUM 212 Humanities II**
Prerequisites: ENG 111
Corequisites: None
This course introduces the humanities as a record in literature, music, art, history, religion, and philosophy of humankind's answers to the fundamental questions of existence. Emphasis is placed on the interconnectedness of various aspects of cultures from early modern times to the present. Upon completion, students should be able to identify significant figures and cultural contributions of the periods studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**HUM 220 Human Values and Meaning**
Prerequisites: ENG 111, ENG 112, ENG 113, ENG 114
Corequisites: None
This course presents some major dimensions of human experience as reflected in art, music, literature, philosophy, and history. Topics include the search for identity, the quest for knowledge, the need for love, the individual and society, and the meaning of life. Upon completion, students should be able to recognize interdisciplinary connections and distinguish between open and closed questions and between narrative and scientific models of understanding. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

**HUM 230 Leadership Development**
Prerequisites: ENG 090 and RED 090; ENG 111
Corequisites: None
This course explores the theories and techniques of leadership and group process. Emphasis is placed on leadership styles, theories of group dynamics, and the moral and ethical responsibilities of leadership. Upon completion, students should be able to identify and analyze a personal philosophy and style of leadership and integrate these concepts in various practical situations.

**HYD 110 Hydraulics/Pneumatics I**
Prerequisites: None
Corequisites: None
This course introduces the basic components and functions of hydraulic and pneumatic systems. Topics include standard symbols, pumps, control valves, control assemblies, actuators, FRL, maintenance procedures, and switching and control devices. Upon completion, students should be able to understand the operation of a fluid power system, including design, application, and troubleshooting.

**HYD 111 Mobile Hydraulic Systems**
Prerequisites: None
Corequisites: None
This course covers hydraulic components on mobile equipment including construction equipment, transportation, and farm equipment. Topics include servicing of pumps, testing and adjusting components, test points, and proper use and care of test equipment. Upon completion, students should be able to use proper test equipment to locate and repair problems on equipment.

**HYD 112 Hydraulics/Med/Heavy Duty**
Prerequisites: None
Corequisites: None
This course introduces hydraulic theory and applications as applied to mobile equipment. Topics include component studies such as pumps, motors, valves, cylinders, filters, reservoirs, lines, and fittings. Upon completion, students should be able to identify, diagnose, test, and repair hydraulic systems using schematics and technical manuals.

**HYD 134 Hydraulic/Hydrostatic Construction**
Prerequisites: None
Corequisites: None
This course covers the hydraulic/hydrostatic components of construction equipment hydraulics and power trains. Topics include testing, adjusting, repair, and replacement of components that are applied to construction equipment hydraulics and transmissions along with other related topics. Upon completion, students should be able to use proper diagnostic procedures and identify, repair, and replace hydraulic and hydrostatic systems on construction equipment.

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**INT 110 International Business**
Prerequisites: None
Corequisites: None
This course provides an overview of the environment, concepts, and basic differences involved in international business. Topics include forms of foreign involvement, international trade theory, governmental influences on trade and strategies, international organizations, multinational corporations, personnel management, and international marketing. Upon completion, students should be able to describe the foundation of international business.

**ISC 110 Workplace Safety**
Prerequisites: None
Corequisites: None
This course introduces the basic concepts of workplace safety. Topics include fire, ladders, lifting, lock-out/tag-out, personal protective devices, and other workplace safety issues related to OSHA compliance. Upon completion, students should be able to demonstrate an understanding of the components of a safe workplace.

**ISC 112 Industrial Safety**
Prerequisites: None
Corequisites: None
This course introduces the principles of industrial safety. Emphasis is placed on industrial safety, OSHA and environmental

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regulations. Upon completion, students should be able to demonstrate knowledge of a safe working environment and OSHA compliance. This course is also available through the Virtual Learning Community (VLC).

ISC 121 Environmental Health and Safety 3 0 0 3
Prerequisites: None
Corequisites: None
This course covers workplace environmental, health, and safety issues. Emphasis is placed on managing the implementation and enforcement of environmental health and safety regulations and on preventing accidents, injuries, and illnesses. Upon completion, students should be able to demonstrate an understanding of basic concepts of environmental, health, and safety issues.

ISC 128 Industrial Leadership 2 0 0 2
Prerequisites: None
Corequisites: None
This course introduces principles and techniques for managers in modern industry. Topics include leadership traits, management principles and processes, managing conflict, group dynamics, team building, counseling, motivation, and communication. Upon completion, students should be able to understand and apply leadership and management principles in work situations.

ISC 132 Manufacturing Quality Control 2 3 0 3
Prerequisites: None
Corequisites: None
This course introduces quality concepts and techniques used in industry. Topics include elementary statistics and probability, process control, process capability, and quality improvement tools. Upon completion, students should be able to demonstrate an understanding of the concepts and principles of quality and apply them to the work environment. Each student will be taught statistical analysis techniques, using computer software in a laboratory environment.

ISC 133 Manufacturing Management Practices 2 0 - 2
Prerequisites: None
Corequisites: None
This course covers successful industrial organizations and management practices for improving quality and productivity. Topics include self-managed work teams, problem-solving skills, and production management techniques. Upon completion, students should be able to demonstrate an understanding of day-to-day plant operations, team management processes, and the principles of group dynamics.

ISC 136 Productivity Analysis I 2 3 0 3
Prerequisites: None
Corequisites: None
This course covers modern methods of improving productivity. Topics include methods analysis, standardized practices, process analysis, and human factors. Upon completion, students should be able to apply productivity improvement techniques.

ISC 175 QA Fundamentals 1 0 0 1
Prerequisites: None
Corequisites: None
This course is designed to increase fundamental knowledge in the philosophies, principles, and practice of quality in the work environment. Topics include the history and basics of quality, philosophies of quality, daily application of principles, and roles of quality professionals with emphasis on cGMP environment. Upon completion, students should be able to discuss quality fundamentals, components of quality systems, and identify standards and programs of quality.

ISC 221 Statistical Quality Control 3 0 0 3
Prerequisites: None
Corequisites: None
This course covers the principles and techniques of statistical process control for the improvement of productivity. Emphasis is placed on basic statistics for quality control, organization and procedures for efficient quality control including inspections, process control, and tests of significance. Upon completion, students should be able to apply statistical principles and techniques to enhance production.

ISC 226 Facilities Design 3 2 0 4
Prerequisites: ISC 136 and ISC 243
Corequisites: None
This course introduces the methods and principles used to design efficient facilities. Emphasis is placed on efficient processes required to optimize facilities design. Upon completion, students should be able to design efficient facilities.

ISC 230 Simulation Production Processes 1 3 0 2
Prerequisites: None
Corequisites: None
This course introduces fundamental principles and procedures for simulation modeling of production processes. Emphasis is placed on problem-solving and engineering applications of simulation modeling for quality enhancement and productivity improvement. Upon completion, students should be able to analyze and model a production process to obtain optimum productive operations.

ISC 237 Quality Management 2 3 0 3
Prerequisites: None
Corequisites: None
This course covers the process by which successful manufacturing organizations achieve customer satisfaction in all processes in the organization. Topics include quality models and approaches, such as MBNQA, ISO 9000, benchmarking, and Deming’s 14 Points, and the incorporation of SPC improvement techniques. Upon completion, students should be able to integrate SPC techniques with successful management practices for a comprehensive understanding of continuous quality improvement.

ISC 243 Production and Operations Management I 2 3 0 3
Prerequisites: None
Corequisites: None
This course introduces concepts used to analyze and solve productivity and operational problems. Topics include operations strategy, forecasting, resource allocation, and materials management. Upon completion, students should be able to recognize, analyze, and solve a variety of productivity and operational problems.

ISC 244 Production and Operations Management II 2 3 0 3
Prerequisites: ISC 243
Corequisites: None
This course covers advanced production and operations management concepts, including the use of computer programs to analyze/solve manufacturing problems. Topics include systems analysis, resource allocation, cost control, and productivity improvement using advanced tools such as linear programming, ABC costing, manufacturing modeling, and manufacturing simulation. Upon completion, students should be able to recognize, analyze, and solve a variety of complex production and operations problems.
### COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
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<tbody>
<tr>
<td>ISC 255</td>
<td>Engineering Economy</td>
<td>2 2 0 3</td>
<td>None</td>
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<tr>
<td>ISC 277</td>
<td>Quality Technology</td>
<td>4 0 0 4</td>
<td>None</td>
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<tr>
<td>ISC 278</td>
<td>cGMP Quality Systems</td>
<td>2 0 0 2</td>
<td>None</td>
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<tr>
<td>ISC 280</td>
<td>Validation Fundamentals</td>
<td>1 2 0 2</td>
<td>None</td>
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<tr>
<td>ITN 110</td>
<td>See WEB 111.</td>
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<tr>
<td>ITN 120</td>
<td>See WEB 120.</td>
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<tr>
<td>ITN 130</td>
<td>See WEB 230.</td>
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<tr>
<td>ITN 140</td>
<td>See WEB 140.</td>
<td></td>
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<tr>
<td>ITN 150</td>
<td>Internet Protocols</td>
<td>2 2 0 3</td>
<td>NET 110</td>
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<td>ITN 170</td>
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<td>ITN 193</td>
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<td>- - - 3</td>
<td>None</td>
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<tr>
<td>ITN 196</td>
<td>Seminar: C++ Test Prep</td>
<td>0 0 3 1</td>
<td>None</td>
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<td>ITN 198</td>
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<td>ITN 210</td>
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<td>ITN 240</td>
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<tr>
<td>ITN 250</td>
<td>Implementing Internet Service</td>
<td>2 2 0 3</td>
<td>RED 090, ITN 130 or ITN 150</td>
</tr>
<tr>
<td>ITN 260</td>
<td>See WEB 260.</td>
<td></td>
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<tr>
<td>ITN 270</td>
<td>Advanced Internet Databases</td>
<td>2 2 0 3</td>
<td>ITN 170</td>
</tr>
<tr>
<td>ITN 280</td>
<td>Unix Internet Programming</td>
<td>2 2 0 3</td>
<td>RED 090</td>
</tr>
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</table>

**Corequisites**:
- None

**Prerequisites**:
- RED 090
- NET 110
- See WEB 111
- See WEB 120
- See WEB 230
- See WEB 140
- See WEB 210
- See WEB 250
- See WEB 180
- None
- C++ Test Prep
- CIS 115
- None
- None
- None
- ITN 130 or ITN 150
- RED 090
- None
- None
- None
- None

This course covers the process of economic evaluation of manufacturing industrial alternatives such as equipment selection, replacement studies, and cost reduction proposals. Topics include discounted cash flows, time value of money, income tax considerations, internal rates of return, and comparison of alternatives using computer programs. Upon completion, students should be able to demonstrate an understanding of engineering economy principles.

This course presents quality assurance topics relating to an effective quality system. Emphasis is placed on quality management concepts, including sampling and reliability. Upon completion, students should have the basic knowledge required to take the ASQC Certified Quality Technician Exam.

This course focuses on the development, implementation, and ongoing maintenance of a quality system in a cGMP environment. Topics include the cGMP standard, components of cGMP quality systems, quality function roles and training, development of documentation such as SOPs, and system review procedures. Upon completion, the student should be able to identify the components of a quality system and develop a quality system manual utilizing the cGMP standard.

This course covers the fundamental concepts and components of a validation program in a cGMP environment. Emphasis is placed on FDA requirements concerning validation, types of validation, documentation, procedures, and the QA role. Upon completion, students should be able to discuss the purpose of validation, identify the steps in the validation process, and effectively utilize sample documentation.

This course is the second of two courses on Internet databases. Topics include database distribution and replication, data warehousing, integration of desktop and Internet database structures. Upon completion, students should be able to design and implement an Internet database.

This course presents advanced concepts and features of the UNIX operating system as they pertain to Internet programming. Topics will include process control, shell-programming and scripts, advanced search techniques, power user utilities and programming for Internet service maintenance. Upon completion, students should be able to successfully perform various Internet-related UNIX programming tasks.
COURSE DESCRIPTIONS

ITN 285  See WEB 285.

ITN 289  See WEB 289.

ITN 293  Selected Topics:  
        PL/SQL Programming  
        Prerequisites:  None 
        Corequisites:  None 
        This course provides an opportunity to explore areas of current interest in Internet Technologies. Emphasis is placed on subject matter appropriate to internet technologies. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

ITN 298  Seminar in Internet Technologies  
        Prerequisites:  Varies, based on topics 
        Corequisites:  None 
        This course provides an opportunity to explore areas of current interest in Internet Technologies. Emphasis is placed on subject matter appropriate to Internet technologies. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

JOU 110  Introduction to Journalism  
        Prerequisites:  None 
        Corequisites:  None 
        This course presents a study of journalistic news, feature, and sports writing. Emphasis is placed on basic news writing techniques and on related legal and ethical issues. Upon completion, students should be able to gather, write, and edit news, feature, and sports articles.

JOU 111  Publication Workshop I  
        Prerequisites:  JOU 110 
        Corequisites:  None 
        This course introduces the basic techniques of producing a publication. Emphasis is placed on writing, editing, layout, design, and printing. Upon completion, students should be able to demonstrate competence in the various phases of publication production.

JOU 242  Introduction to Multimedia  
        Prerequisites:  CIS 110 
        Corequisites:  None 
        This course is an introduction to the basic formatting skills necessary to create messages for the multimedia environment such as web-based and other digital formats. Emphasis is on the use of computers to present and combine text, graphics, audio, and video. Upon completion, students should be able to create state-of-the-art multimedia presentations. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.

LAR 111  Introduction to Landscape Architectural Technology  
        Prerequisites:  None 
        Corequisites:  None 
        This course introduces basic architectural drafting techniques, lettering, and use of architectural and engineering scales. Topics include creating landscape architectural plans, sections, and details; reprographic techniques; and other related topics. Upon completion, students should be able to prepare and print scaled drawings within minimum landscape architectural standards.

LAR 112  Landscape Materials and Methods  
        Prerequisites:  None 
        Corequisites:  None 
        This course introduces landscape architecture construction materials and their methodologies. Topics include landscape construction terminology, materials and their properties, manufacturing processes, landscape construction techniques, and other related topics. Upon completion, students should be able to detail landscape construction materials and properties.

LAR 113  Residential Landscape Design  
        Prerequisites:  LAR 111 
        Corequisites:  None 
        The course covers the creation of residential landscape design working drawings. Topics include residential plans, elevation, sections, plant selection/lists, and other related topics. Upon completion, students should be able to prepare a set of residential landscape working drawings which are within accepted architectural standards.

LAR 193  Selected Topics in Landscape Architecture  
        Prerequisites:  Varies, based on topic 
        Corequisites:  None 
        This course provides an opportunity to explore areas of current interest in Landscape Architecture Technology. Emphasis is placed on subject matter appropriate to landscape architecture. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

LAR 211  Landscape Construction and Design  
        Prerequisites:  LAR 113 
        Corequisites:  None 
        This course covers commercial landscape construction and design techniques. Topics include creation of commercial landscape architecture plans, sections, and details; plotting techniques; and other related topics. Upon completion, students should be able to prepare a set of working drawings and plot scaled drawings within landscape architectural standards.

LAR 223  Landscape Design Project  
        Prerequisites:  ARC 114, LAR 211 
        Corequisites:  None 
        This course provides the opportunity to design and prepare landscape contract documents. Topics include schematic design, design development, construction documents, landscape architecture plans, and other related topics. Upon completion,
students should be able to prepare a set of working drawings within landscape architectural standards.

**LAR 230 Principles of Horticulture I**  
Prerequisites: None  
Corequisites: None  
This course introduces the identification, selection, and installation of landscape plants. Topics include ornamental plant selection, sun and shade plants, fertilization, pruning, pest and disease control, and other related topics. Upon completion, students should be able to select plants for different landscape situations.

**LAR 231 Principles of Horticulture II**  
Prerequisites: LAR 230  
Corequisites: None  
This course is a continuation of LAR 230 and covers the identification, selection, and installation of landscape plants. Topics include deciduous/evergreen and interior plant selection, sun and shade plants, fertilization, pruning, pest and disease identification, and other related topics. Upon completion, students should be able to select plants for different landscape situations.

**LAR 241 Advanced Site Planning**  
Prerequisites: ARC 240  
Corequisites: None  
This course covers advanced site planning, grading plants, and earthwork calculations. Topics include advanced site analysis, site work, site utilities, cut and fill, soil erosion control, and other related topics. Upon completion, students should be able to prepare site development plans and details and perform cut and fill calculations.

**LAR 242 Planning and Environment**  
Prerequisites: None  
Corequisites: None  
This course covers the historical development of urban and rural environmental problems and issues. Emphasis is placed on governmental response to environmental issues, built and natural environments, historical conflicts, and attempts to produce planning compatibility. Upon completion, students should be able to demonstrate an understanding of the importance of considering natural resources when making political and planning decisions.

**LAR 250 Survey of Landscape Architecture**  
Prerequisites: None  
Corequisites: None  
This course introduces the historical trends in landscape architectural forms. Emphasis is placed on landscape architectural history and current trends. Upon completion, students should be able to demonstrate an understanding of significant historical and current landscape architectural styles. *This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.*

| MAC 111 Machining Technology I | 2 12 0 6 | MAC 11a Machining Technology I-Part 1 | 1 6 0 3 |
| MAC 11a Machining Technology I-Part 1 | 1 6 0 3 | MAC 11b Machining Technology I-Part 2 | 1 6 0 3 |
| MAC 112 Machining Technology II | 2 12 0 6 | MAC 111 Machining Technology III | 2 12 0 6 |
| MAC 113 Machining Technology III | 2 12 0 6 | MAC 114 Introduction to Metrology | 2 0 0 2 |
| MAC 121 Introduction to CNC | 2 0 0 2 |
to explain operator safety, machine protection, data input, program preparation, and program storage.

MAC 122 CNC Turning 1 3 0 2
Prerequisites: None
Corequisites: None
This course introduces the programming, setup, and operation of CNC turning centers. Topics include programming formats, control functions, program editing, part production, and inspection. Upon completion, students should be able to manufacture simple parts using CNC turning centers.

MAC 124 CNC Milling 1 3 0 2
Prerequisites: None
Corequisites: None
This course introduces the manual programming, setup, and operation of CNC machining centers. Topics include programming formats, control functions, program editing, part production, and inspection. Upon completion, students should be able to manufacture simple parts using CNC machining centers.

MAC 126 CNC Metal Fabrication 1 3 0 2
Prerequisites: None
Corequisites: None
This course introduces CNC operations used in precision metal fabrication. Topics include CNC control of shears, brakes, punch presses, and lasers and the programming techniques used to produce parts. Upon completion, students should be able to demonstrate knowledge of equipment operations, CNC control functions, and part programming.

MAC 151 Machining Calculations 1 2 0 2
Prerequisites: None
Corequisites: None
This course introduces basic calculations as they relate to machining occupations. Emphasis is placed on basic calculations and their applications in the machine shop. Upon completion, students should be able to perform basic shop calculations.

MAC 152 Advanced Machining Calculations 1 2 0 2
Prerequisites: None
Corequisites: None
This course combines mathematical functions with practical machine shop applications and problems. Emphasis is placed on gear ratios, lead screws, indexing problems, and their applications in the machine shop. Upon completion, students should be able to calculate solutions to machining problems.

MAC 153 Compound Angles 1 2 0 2
Prerequisites: MAT 120
Corequisites: None
This course introduces the application of basic types and uses of compound angles. Emphasis is placed on problem solving by tilting and rotating adjacent angles to resolve an unknown compound angle. Upon completion, students should be able to set up and develop compound angles on parts using problem-solving techniques. This course is a unique concentration requirement of the Tool, Die, and Mold Making concentration in the Machining Technology program.

MAC 222 Advanced CNC Turning 1 3 0 2
Prerequisites: MAC 122
Corequisites: None
This course covers advanced methods in setup and operation of CNC turning centers. Emphasis is placed on programming and production of complex parts. Upon completion, students should be able to demonstrate skills in programming, operations, and setup of CNC turning centers.

MAC 224 Advanced CNC Milling 1 3 0 2
Prerequisites: MAC 124
Corequisites: None
This course covers advanced methods in setup and operation of CNC machining centers. Emphasis is placed on programming and production of complex parts. Upon completion, students should be able to demonstrate skills in programming, operations, and setup of CNC machining centers.

MAC 229 CNC Programming 2 0 0 2
Prerequisites: MAC 121, MAC 122, MAC 124, or MAC 226
Corequisites: None
This course provides concentrated study in advanced programming techniques for working with modern CNC machine tools. Topics include custom macros and subroutines, canned cycles, and automatic machining cycles currently employed by the machine tool industry. Upon completion, students should be able to program advanced CNC functions while conserving machine memory.

MAC 231 CNC Graphics Programming: Turning 1 4 0 3
Prerequisites: MAC 121 or MAC 122
Corequisites: None
This course introduces Computer Numerical Control graphics programming and concepts for turning center applications. Emphasis is placed on the interaction of menus to develop a shape file in a graphics CAM system and to develop tool path geometry and part geometry. Upon completion, students should be able to develop a job plan using CAM software, include machine selection, tool selection, operational sequence, speed, feed, and cutting depth.

MAC 232 CNC Graphics Programming: Milling 1 4 0 3
Prerequisites: MAC 121 or MAC 122
Corequisites: None
This course introduces Computer Numerical Control graphics programming and concepts for machining center applications. Emphasis is placed on developing a shape file in a graphics CAM system and transferring coded information from CAM graphics to the CNC milling center. Upon completion, students should be able to develop a complete job plan using CAM software to create a multi-axis CNC program.

MAC 241 Jigs and Fixtures I 2 6 0 4
Prerequisites: MAC 112
Corequisites: None
This course introduces the application and use of jigs and fixtures. Emphasis is placed on design and manufacture of simple jigs and fixtures. Upon completion, students should be able to design and build simple jigs and fixtures.

MAC 243 Die Making I 2 6 0 4
Prerequisites: MAC 112
Corequisites: None
This course introduces the principles and applications of die making. Topics include types, construction, and application of dies. Upon completion, students should be able to design and build simple dies.

MAC 244 Die Making II 1 9 0 4
Prerequisites: MAC 243
Corequisites: None
This course provides continued study in the application and use of dies. Emphasis is placed on the design and manufacturing of complex dies. Upon completion, students should be able to design and build complex dies.
COURSE DESCRIPTIONS

MAC 245 Mold Construction I  2 6 0 4
Prerequisites: MAC 112  
Corequisites: None
This course introduces the principles of mold making. Topics include types, construction, and application of molds. Upon completion, students should be able to design and build simple molds.

MAC 246 Mold Construction II  1 9 0 4
Prerequisites: MAC 245  
Corequisites: None
This course provides continued study in the application and use of molds. Emphasis is placed on design and manufacturing of complex molds. Upon completion, students should be able to design and build complex molds.

MAT 001 Mathematics Skills Lab  - - - -
Prerequisites: None  
Corequisites: None
Designed to support all curriculum mathematics courses and other curriculum courses requiring the use of mathematics skills.

MAT 050 Basic Math Skills  3 2 0 4
Prerequisites: None  
Corequisites: None
This course is designed to strengthen basic math skills. Topics include properties, rounding, estimating, comparing, converting, and computing whole numbers, fractions, and decimals. Upon completion, students should be able to perform basic computations and solve relevant mathematical problems.

MAT 060 Essential Mathematics  3 2 0 4
Prerequisites: MAT 050 or placement  
Corequisites: None
This course is a comprehensive study of mathematical skills which should provide a strong mathematical foundation to pursue further study. Topics include principles and applications of decimals, fractions, percents, ratio and proportion, order of operations, geometry, measurement, and elements of algebra and statistics. Upon completion, students should be able to perform basic computations and solve relevant, multi-step mathematical problems using technology where appropriate.

MAT 070 Introductory Algebra  3 2 0 4
Prerequisites: MAT 060 or placement  
Corequisites: RED 080 or ENG 085
This course establishes a foundation in algebraic concepts and problem solving. Topics include signed numbers, exponents, order of operations, simplifying expressions, solving linear equations and inequalities, graphing, formulas, polynomials, factoring, and elements of geometry. Upon completion, students should be able to apply the above concepts in problem solving using appropriate technology.

MAT 080 Intermediate Algebra  3 2 0 4
Prerequisites: MAT 070 or placement  
Corequisites: RED 080 or ENG 085
This course continues the study of algebraic concepts with emphasis on applications. Topics include factoring: rational expressions; rational exponents; rational, radical, and quadratic equations; systems of equations; inequalities; graphing; functions; variations; complex numbers; and elements of geometry. Upon completion, students should be able to apply the above concepts in problem solving using appropriate technology.

MAT 090 Accelerated Algebra  3 2 0 4
Prerequisites: MAT 060 or MAT 080 or placement  
Corequisites: RED 080 or ENG 085
This course covers algebraic concepts with emphasis on applications. Topics include those covered in MAT 070 and MAT 080. Upon completion, students should be able to apply algebraic concepts in problem solving using appropriate technology.

MAT 095 Algebraic Concepts  3 0 0 3
Prerequisites: MAT 080  
Corequisites: None
This course covers algebraic concepts with an emphasis on applications. Topics include linear, quadratic, absolute value, rational and radical equations, sets, real and complex numbers, exponents, graphing, formulas, polynomials, systems of equations, inequalities, and functions. Upon completion, students should be able to apply the above topics in problem solving using appropriate technology.

MAT 099 Using Technology in Math  1 0 0 1
Prerequisites: None  
Corequisites: None
This course provides an introduction to the technology used in the study of mathematics. Topics include the use of technology to perform calculations, graph and analyze functions, create algebraic models, perform statistical analysis, and make tables of values. Upon completion, students should be able to effectively use graphing calculators and spreadsheets as mathematical tools to explore functions, analyze data, and solve problems.

MAT 101 Applied Mathematics I  2 2 0 3
Prerequisites: MAT 060  
Corequisites: None
This course is a comprehensive review of arithmetic with basic algebra designed to meet the needs of certificate and diploma programs. Topics include arithmetic and geometric skills used in applications of percent, linear equations, formulas, and statistics. Upon completion, students should be able to solve practical problems in their specific areas of study.

MAT 110 Mathematical Measurement  2 2 0 3
Prerequisites: MAT 070  
Corequisites: None
This course provides an activity-based approach to utilizing, interpreting, and communicating data in a variety of measurement systems. Topics include accuracy, precision, conversion, and estimation within metric, apothecary, and avoirdupois systems; ratio and proportion; measures of central tendency and dispersion; and charting of data. Upon completion, students should be able to apply proper techniques to gathering, recording, manipulating, analyzing, and communicating data.

MAT 115 Mathematical Models  2 2 0 3
Prerequisites: MAT 070  
Corequisites: None
This course develops the ability to utilize mathematical skills and technology to solve problems at a level found in non-mathematics-intensive programs. Topics include applications to percent, ratio and proportion, formulas, statistics, functional notation, linear functions and their groups, probability, sampling techniques, scatter plots, and modeling. Upon completion, students should be able to solve practical problems, reason and communicate with mathematics, and work confidently, collaboratively, and independently.
COURSE DESCRIPTIONS

MAT 121 Algebra and Trigonometry I
Prerequisites: MAT 070
Corequisites: None
This course provides an integrated approach to technology and the skills required to manipulate, display, and interpret mathematical functions and formulas used in problem solving. Topics include simplification, evaluation, and solving of algebraic and radical functions; complex numbers; right triangle trigonometry; systems of equations; and the use of technology. Upon completion, students should be able to demonstrate an understanding of the use of mathematics and technology to solve problems and analyze and communicate results.

MAT 122 Algebra/Trigonometry II
Prerequisites: MAT 121
Corequisites: None
This course extends the concepts covered in MAT 121 to include additional topics in algebra, function analysis, and trigonometry. Topics include exponential and logarithmic functions, translation and scaling of functions, Sine Law, Cosine Law, vectors, and statistics. Upon completion, students should be able to demonstrate an understanding of the use of technology to solve problems and to analyze and communicate results.

MAT 140 Survey of Mathematics
Prerequisites: MAT 070
Corequisites: MAT 140A
This course provides an introduction in a non-technical setting to selected topics in mathematics. Topics may include, but are not limited to, sets, logic, probability, statistics, matrices, mathematical systems, geometry, topology, mathematics of finance, and modeling. Upon completion, students should be able to understand a variety of mathematical applications, think logically, and be able to work collaboratively and independently.

MAT 140A Survey of Mathematics Lab
Prerequisites: MAT 070
Corequisites: MAT 140
This course is the first of a two-course sequence that develops a deeper understanding and appreciation of the basic concepts of mathematics. Emphasis is placed on sets, logic, number bases, elementary number theory, introductory algebra, measurement including metrics, and problem solving. Upon completion, students should be able to communicate orally and in writing these basic mathematical concepts. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

MAT 141 Mathematical Concepts I
Prerequisites: MAT 080 or MAT 090
Corequisites: None
This course is the second of a two-course sequence that develops a deeper understanding and appreciation of the basic concepts of mathematics. Emphasis is placed on probability, statistics, functions, introductory geometry, and mathematics of finance. Upon completion, students should be able to communicate orally and in writing these basic mathematical concepts and utilize technology as a mathematical tool. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirements in natural sciences/mathematics.

MAT 142 Mathematical Concepts II
Prerequisites: MAT 141
Corequisites: None
This course is a laboratory for MAT 142. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirements in natural sciences/mathematics.

MAT 142A Mathematical Concepts II Lab
Prerequisites: MAT 141
Corequisites: MAT 142
This course is a laboratory for MAT 142. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirements in natural sciences/mathematics.

MAT 145 Analytical Mathematics
Prerequisites: MAT 080 or MAT 090
Corequisites: None
This course is designed to develop problem-solving and reasoning skills by the study of selected areas of mathematics. Topics include elementary and Boolean algebra, sets, logic, number theory, numeration systems, probability, statistics, and linear programming. Upon completion, students should be able to apply logic and other mathematical concepts.

MAT 145A Analytical Mathematics Lab
Prerequisites: MAT 080 or MAT 090
Corequisites: MAT 145
This course is a laboratory for MAT 145. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively.

MAT 151 Statistics I
Prerequisites: MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 140, MAT 161, MAT 171, or MAT 175
Corequisites: MAT 151A
This course provides a project-based approach to the study of basic probability, descriptive and inferential statistics, and decision making. Emphasis is placed on measures of central tendency and dispersion, correlation, regression, discrete and continuous probability distributions, quality control, population parameter estimation, and hypothesis testing. Upon completion, students should be able to describe important characteristics of a set of data and draw inferences about a population from sample data. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.

MAT 141A Mathematical Concepts I Lab
Prerequisites: MAT 080 or MAT 090
Corequisites: MAT 141
This course is a laboratory for MAT 141. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in natural sciences/mathematics.
### COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
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<tbody>
<tr>
<td>MAT 151A</td>
<td>Statistics I Lab</td>
<td>3</td>
<td>MAT 080, MAT 090, MAT 095, MAT 120, MAT 121, MAT 161, MAT 171, or MAT 175</td>
<td>MAT 151</td>
</tr>
<tr>
<td></td>
<td>This course is a laboratory for MAT 151. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.</td>
<td></td>
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<tr>
<td>MAT 155</td>
<td>Statistical Analysis</td>
<td>3</td>
<td>MAT 080 or MAT 090</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>This course is an introduction to descriptive and inferential statistics. Topics include sampling, distributions, plotting data, central tendency, dispersion, Central Limits Theorem, confidence intervals, hypothesis testing, correlations, regressions, and multinomial experiments. Upon completion, students should be able to describe data and test inferences about populations using sample data.</td>
<td></td>
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<tr>
<td>MAT 155A</td>
<td>Statistical Analysis Lab</td>
<td>3</td>
<td>MAT 080 or MAT 090</td>
<td>MAT 155</td>
</tr>
<tr>
<td></td>
<td>This course is a laboratory for MAT 155. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 161</td>
<td>College Algebra</td>
<td>3</td>
<td>MAT 080 or MAT 090</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>This course provides an integrated technological approach to algebraic topics used in problem solving. Emphasis is placed on equations and inequalities; polynomials, rational, exponential and logarithmic functions; and graphing and data analysis/modeling. Upon completion, students should be able to choose an appropriate model to fit a data set and use the model for analysis and prediction.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAT 161A</td>
<td>College Algebra Lab</td>
<td>3</td>
<td>MAT 080 or MAT 090</td>
<td>MAT 161</td>
</tr>
<tr>
<td></td>
<td>This course is a laboratory for MAT 161. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>MAT 165</td>
<td>Finite Mathematics</td>
<td>3</td>
<td>MAT 161</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>This course provides topics used to formulate models and to solve and interpret solutions using an algorithmic approach. Topics include linear algebra, linear programming, simplex method, sets and counting, probability, mathematics of finance, and logic. Upon completion, students should be able to demonstrate both an understanding of the theoretical concepts of finite mathematics and the ability to solve related problems.</td>
<td></td>
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<td></td>
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<tr>
<td>MAT 165A</td>
<td>Finite Mathematics Lab</td>
<td>3</td>
<td>MAT 161</td>
<td>MAT 165</td>
</tr>
<tr>
<td></td>
<td>This course is a laboratory for MAT 165. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively.</td>
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<td></td>
<td></td>
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<tr>
<td>MAT 167</td>
<td>Discrete Mathematics</td>
<td>3</td>
<td>MAT 121, MAT 161</td>
<td>MAT 167A</td>
</tr>
<tr>
<td></td>
<td>This course is a study of discrete mathematics with emphasis on applications. Topics include number systems, combinations/permutations, mathematical logic/proofs, sets/counting, Boolean algebra, mathematical induction, trees/graphs, and algorithms. Upon completion, students should be able to demonstrate competence in the topics covered.</td>
<td></td>
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</tr>
<tr>
<td>MAT 171</td>
<td>Precalculus Algebra</td>
<td>3</td>
<td>MAT 080, MAT 090, MAT 095 or MAT 161</td>
<td>MAT 171A</td>
</tr>
<tr>
<td></td>
<td>This is the first of two courses designed to emphasize topics which are fundamental to the study of calculus. Emphasis is placed on equations and inequalities, functions (linear, polynomial, rational), systems of equations and inequalities, and parametric equations. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and predictions.</td>
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</tr>
<tr>
<td>MAT 171A</td>
<td>Precalculus Algebra Lab</td>
<td>3</td>
<td>MAT 080, MAT 090, MAT 095 or MAT 161</td>
<td>MAT 171</td>
</tr>
<tr>
<td></td>
<td>This course is a laboratory for MAT 171. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.</td>
<td></td>
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<tr>
<td>MAT 172</td>
<td>Precalculus Trigonometry</td>
<td>3</td>
<td>MAT 171</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>This is the second of two courses designed to emphasize topics which are fundamental to the study of calculus. Emphasis is placed on properties and applications of transcendental functions and their graphs, right and oblique triangle trigonometry, conic sections, vectors, and polar coordinates. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and prediction.</td>
<td></td>
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</tr>
</tbody>
</table>
MAT 172A Precalculus Trigonometry Lab
Prerequisites: MAT 171
Corequisites: MAT 172
This course is a laboratory for MAT 172. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively.

MAT 175 Precalculus
Prerequisites: None
Corequisites: None
This course provides an intense study of the topics which are fundamental to the study of calculus. Emphasis is placed on functions and their graphs with special attention to polynomial, rational, exponential, logarithmic and trigonometric functions, and analytic trigonometry. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and prediction.

MAT 175A Precalculus Lab
Prerequisites: None
Corequisites: MAT 175
This course is a laboratory for MAT 175. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively.

MAT 223 Applied Calculus
Prerequisites: MAT 122
Corequisites: None
This course provides an introduction to the calculus concepts of differentiation and integration by way of application and is designed for engineering technology students. Topics include limits, slope, derivatives, related rates, areas, integrals, and applications. Upon completion, students should be able to demonstrate an understanding of the use of calculus and technology to solve problems and to analyze and communicate results.

MAT 263 Brief Calculus
Prerequisites: MAT 161
Corequisites: None
This course introduces concepts of differentiation and integration and their applications to solving problems; the course is designed for students needing one semester of calculus. Topics include functions, graphing, differentiation, and integration with emphasis on applications drawn from business, economics, and biological and behavioral sciences. Upon completion, students should be able to demonstrate an understanding of the use of basic calculus and technology to solve problems and to analyze and communicate results.

MAT 263A Brief Calculus Lab
Prerequisites: MAT 161
Corequisites: MAT 263
This course is a laboratory for MAT 263. Emphasis is placed on experiences that enhance the materials presented in the class. Upon completion, students should be able to solve problems, apply critical thinking, work in teams, and communicate effectively.

MAT 271 Calculus I
Prerequisites: MAT 172 or MAT 175
Corequisites: None
This course covers in depth the differential calculus portion of a three-course calculus sequence. Topics include limits, continuity, derivatives, and integrals of algebraic and transcendental functions of one variable, with applications. Upon completion, students should be able to apply differentiation and integration techniques to algebraic and transcendental functions.

MAT 272 Calculus II
Prerequisites: MAT 271
Corequisites: None
This course provides a rigorous treatment of integration and is the second calculus course in a three-course sequence. Topics include applications of definite integrals, techniques of integration, indeterminate forms, improper integrals, infinite series, conic sections, parametric equations, polar coordinates, and differential equations. Upon completion, students should be able to use integration and approximation techniques to solve application problems.

MAT 273 Calculus III
Prerequisites: MAT 272
Corequisites: None
This course covers the calculus of several variables and is third calculus course in a three-course sequence. Topics include functions of several variables, partial derivatives, multiple integrals, solid analytical geometry, vector-valued functions, and line and surface integrals. Upon completion, students should be able to solve problems involving vectors and functions of several variables.

MAT 280 Linear Algebra
Prerequisites: MAT 271
Corequisites: None
This course provides a study of linear algebra topics with emphasis on the development of both abstract concepts and applications. Topics include vectors, systems of equations, matrices, determinants, vector spaces, linear transformations in two or three dimensions, eigenvectors, eigenvalues, diagonalization and orthogonality. Upon completion, students should be able to demonstrate both an understanding of the theoretical concepts and appropriate use of linear algebra models to solve application problems.

MAT 285 Differential Equations
Prerequisites: MAT 272
Corequisites: None
This course provides an introduction to ordinary differential equations with an emphasis on applications. Topics include first-order, linear higher-order, and systems of differential equations; numerical methods; series solutions; eigenvalues and eigenvectors; Laplace transforms; and Fourier series. Upon completion, students should be able to use differential equations to model physical phenomena, solve the equations, and use the solutions to analyze the phenomena.

MEC 110 Introduction to CAD/CAM
Prerequisites: None
Corequisites: None
This course introduces CAD/CAM. Emphasis is placed on transferring part geometry from CAD to CAM for the development of a CNC-ready program. Upon completion, students should be able to use CAD/CAM software to produce a CNC program.

MEC 111 Machine Processes I
Prerequisites: None
Corequisites: None
This course introduces shop safety, hand tools, machine processes, measuring instruments, and the operation of machine shop equipment. Topics include use and care of tools, safety, measuring tools, and the basic setup and operation of common machine tools. Upon completion, students should be able to safely machine simple parts to specified tolerances.
MEC 130  Mechanisms  2 2 0 3  
Prerequisites: MAT 121 or MAT 161 or MAT 171  
Corequisites: None  
This course introduces the purpose and action of various mechanical devices. Topics include cams, cables, gear trains, differentials, screws, belts, pulleys, shafts, levers, lubricants, and other devices. Upon completion, students should be able to analyze, maintain, and troubleshoot the components of mechanical systems.

MEC 131  Metalworking Processes  2 3 0 3  
Prerequisites: None  
Corequisites: None  
This course introduces the standard practices that are found in a metal workshop. Topics include the proper care/use of basic hand tools and precision measuring instruments and layout procedures/operation of lathes, drill presses, grinders, milling machines, and power saws. Upon completion, students should be able to work safely in the metal workshop and use basic metalworking equipment.

MEC 141  Introduction to Manufacturing Processes  2 2 0 3  
Prerequisites: None  
Corequisites: None  
This course covers the properties and characteristics of manufacturing materials and the processes used to form them. Emphasis is placed on manufacturing materials, heat-treating processes, and manufacturing processes. Upon completion, students should be able to identify physical characteristics of materials and describe processes used to manufacture a part.

MEC 145  Manufacturing Materials I  2 3 0 3  
Prerequisites: None  
Corequisites: None  
This course introduces a variety of manufacturing materials and common processing techniques. Emphasis is placed on the processing, testing, and application of materials such as wood, metals, plastics, ceramics, and composites. Upon completion, students should be able to demonstrate an understanding of fundamental engineering applications for a variety of materials, including their process capabilities and limitations.

MEC 161  Manufacturing Processes I  3 0 0 3  
Prerequisites: None  
Corequisites: MEC 161A  
This course provides the fundamental principles of value-added processing of materials into usable forms for the customer. Topics include material properties and traditional and non-traditional manufacturing processes. Upon completion, students should be able to specify appropriate manufacturing processing for common engineering materials.

MEC 161A  Manufacturing Processes I Lab  0 3 0 1  
Prerequisites: None  
Corequisites: MEC 161  
This course is a laboratory for MEC 161. Emphasis is placed on experiences that enhance the materials presented in MEC 161. Upon completion, students should be able to apply the laboratory experiences to the concepts presented in MEC 161.

MEC 180  Engineering Materials  2 3 0 3  
Prerequisites: None  
Corequisites: None  
This course introduces the physical and mechanical properties of materials. Topics include materials testing, pre and post-manufacturing processes, and material selection of ferrous and non-ferrous metals, plastics, composites, and non-conventional materials. Upon completion, students should be able to utilize basic material property tests and select appropriate materials for applications.

MEC 231  Computer-Aided Manufacturing I  1 4 0 3  
Prerequisites: None  
Corequisites: None  
This course introduces computer-aided manufacturing (CAM) applications and concepts. Emphasis is placed on developing/defining part geometry and the processing information needed to manufacture parts. Upon completion, students should be able to demonstrate skills in defining part geometry, program development, and code generation using CAM software.

MEC 251  Statics  2 2 0 3  
Prerequisites: MEC 121 or MEC 161 or MEC 171  
Corequisites: None  
This course covers the concepts and principles of statics. Topics include systems of forces and moments on structures in two- and three-dimensions in equilibrium. Upon completion, students should be able to analyze forces and moments on structures.

MEC 252  Strength of Materials  2 2 0 3  
Prerequisites: MEC 251  
Corequisites: None  
This course covers the principles and concepts of stress analysis. Topics include centroids, moments of inertia, shear/mount diagrams, and stress and strain. Upon completion, students should be able to perform a stress and strain analysis on structural components.

MEC 260  Fundamentals of Machine Design  2 3 0 3  
Prerequisites: MEC 121 or MEC 161 or MEC 171  
Corequisites: None  
This course introduces the basic elements of machine design. Topics include vectors, moments, friction, velocity, and torque. Upon completion, students should be able to size mechanical components and make component selections from manufacturers’ catalogs.

MEC 265  Fluid Mechanics  2 2 0 3  
Prerequisites: MEC 121 or MEC 161 or MEC 171  
Corequisites: None  
This course covers the physical behavior of fluids and fluid systems. Topics include fluid statics and dynamics, laminar and turbulent flow, Bernoulli’s Equation, components, applications, and other related topics. Upon completion, students should be able to apply fluid power principles to practical applications.

MEC 267  Thermal Systems  2 2 0 3  
Prerequisites: PHY 131 or PHY 151 and MEC 121 or MEC 161 or MEC 171  
Corequisites: None  
This course introduces the fundamental laws of thermodynamics. Topics include work and energy, open and closed systems, and heat engines. Upon completion, students should be able to demonstrate a knowledge of the laws and principles that apply to thermal power. Special emphasis is also placed on processes of heat transfer: conduction, convection, and radiation.

MEC 276  Mechanical Project Design  0 3 0 1  
Prerequisites: None  
Corequisites: None  
This course provides an opportunity for students to utilize all facets of their educational experience to solve an engineering design problem in a multi-disciplinary environment. Topics include project planning and organization, engineering analysis and
design, selection of materials and processes, economic analysis, communication, and project documentation. Upon completion, students should be able to demonstrate the ability to complete a comprehensive design project, concluding with a formal report.

MED 110 Orientation to Medical Assisting
Prerequisites: Enrollment in the Medical Assisting program
Corequisites: None
This course covers the history of medicine and the role of the medical assistant in the health care setting. Emphasis is placed on professionalism, communication, attitude, behaviors, and duties in the medical environment. Upon completion, students should be able to project a positive attitude and promote the profession of medical assisting.

MED 113 Orientation to Clinical Setting II
Prerequisites: Department approval based on prior course completion.
Corequisites: None
This course provides an opportunity to observe and/or perform in the medical setting. Emphasis is placed on administrative and clinical medical assisting. Upon completion, students should be able to identify administrative and clinical procedures in the healthcare environment.

MED 114 Professional Interaction in Health Care
Prerequisites: Enrollment in the Medical Assisting program
Corequisites: None
This course is designed to identify various patient behaviors encountered in the medical setting. Emphasis is placed on stressors related to illness, cultural influences, death and dying, and needs specific to patients. Upon completion, students should be able to utilize appropriate methods of verbal and nonverbal communication with empathy and impartiality.

MED 118 Medical Law and Ethics
Prerequisites: Enrollment in the Medical Assisting program
Corequisites: None
This course covers legal relationships of physicians and patients, contractual agreements, professional liability, malpractice, medical practice acts, informed consent, and bioethical issues. Emphasis is placed on legal terms, professional attitudes, and the principles and basic concepts of ethics and laws involved in providing medical services. Upon completion, students should be able to meet the legal and ethical responsibilities of a multi-skilled health professional.

MED 121 Medical Terminology I
Prerequisites: Enrollment in the Medical Assisting program
Corequisites: None
This course introduces prefixes, suffixes, and word roots used in the language of medicine. Topics include medical vocabulary and the terms that relate to the anatomy, physiology, pathological conditions, and treatment of selected systems. Upon completion, students should be able to pronounce, spell, and define medical terms as related to selected body systems and their pathological disorders.

MED 122 Medical Terminology II
Prerequisites: Department approval based on prior course completion.
Corequisites: None
This course is the second in a series of medical terminology courses. Topics include medical vocabulary and the terms that relate to the anatomy, physiology, pathological conditions, and treatment of selected systems. Upon completion, students should be able to pronounce, spell, and define medical terms as related to selected body systems and their pathological disorders.

MED 130 Administrative Office Procedures I
Prerequisites: Enrollment in the Medical Assisting program
Corequisites: None
This course introduces medical office administrative procedures. Topics include appointment processing, written and oral communications, medical records, patient orientation, and safety. Upon completion, students should be able to perform basic administrative skills within the medical environment.

MED 131 Administrative Office Procedures II
Prerequisites: Department approval based on prior course completion.
Corequisites: None
This course provides medical office procedures in both economic and management skills. Topics include physical plant maintenance, equipment and supplies, liability coverage, medical economics, and introductory insurance procedures. Upon completion, students should be able to manage the economics of the medical office and supervise personnel.

MED 134 Medical Transcription
Prerequisites: MED 121
Corequisites: MED 122
This course provides the basic knowledge, understanding, and skills required to complete medical reports and transcribe medical dictation. Emphasis is placed on correct punctuation, capitalization, and spelling. Upon completion, students should be able to demonstrate competence in medical transcription.

MED 140 Examining Room Procedures I
Prerequisites: Department approval based on prior course completion.
Corequisites: None
This course provides instruction in clinical examining room procedures. Topics include asepsis, infection control, assisting with exams and treatment, patient education, preparation and administration of medications, EKG, vital signs, and medical emergencies. Upon completion, students should be able to demonstrate competence in exam room procedures.

MED 150 Laboratory Procedures I
Prerequisites: Department approval based on prior course completion.
Corequisites: None
This course provides instruction in basic lab techniques used by the medical assistant. Topics include lab safety, quality control, collecting and processing specimens, performing selective tests, phlebotomy, screening and follow-up of test results, and OSHA/CLIA regulations. Upon completion, students should be able to perform basic lab tests/skills based on course topics.
### COURSE DESCRIPTIONS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>MED 232</td>
<td>Medical Insurance Coding</td>
<td>3</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>MED 240</td>
<td>Exam Room Procedures II</td>
<td>3</td>
<td>MED 140</td>
<td>None</td>
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<tr>
<td>MED 260</td>
<td>Medical Clinical Externship</td>
<td>3</td>
<td>None</td>
<td>None</td>
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<tr>
<td>MED 262</td>
<td>Clinical Perspectives</td>
<td>3</td>
<td>Department approval based on prior course completion.</td>
<td>None</td>
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<td>MED 264</td>
<td>Medical Assisting Overview</td>
<td>3</td>
<td>Department approval based on prior course completion.</td>
<td>None</td>
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<td>MED 270</td>
<td>Symptomatology</td>
<td>3</td>
<td>None</td>
<td>None</td>
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<tr>
<td>MED 272</td>
<td>Drug Therapy</td>
<td>3</td>
<td>None</td>
<td>None</td>
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<td>MKT 120</td>
<td>Principles of Marketing</td>
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<td>MKT 123</td>
<td>Fundamentals of Selling</td>
<td>3</td>
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<td>MKT 221</td>
<td>Consumer Behavior</td>
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<td>MKT 223</td>
<td>Customer Service</td>
<td>3</td>
<td>None</td>
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<td>MKT 224</td>
<td>International Marketing</td>
<td>3</td>
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<tr>
<td>MLT 110</td>
<td>Introduction to MLT</td>
<td>3</td>
<td>Enrollment in the Medical Laboratory Technology program</td>
<td>None</td>
</tr>
</tbody>
</table>

**Overview**

This course covers the study of disease symptoms and the appropriate actions taken by medical assistants in a medical facility in relation to these symptoms. Emphasis is placed on interviewing skills and appropriate triage, preparing patients for procedures, and screening test results. Upon completion, students should be able to recognize how certain symptoms relate to specific diseases, recognize emergency situations, and take appropriate actions.


**COURSE DESCRIPTIONS**

**MLT 111 Urinalysis and Body Fluids**

| Prerequisites: | Enrollment in the Medical Laboratory Technology program |
| Corequisites: | None |

This course introduces the laboratory analysis of urine and body fluids. Topics include physical, chemical, and microscopic examination of the urine and body fluids. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting urinalysis and body fluid tests.

**MLT 115 Laboratory Calculations**

| Prerequisites: | Enrollment in the Medical Laboratory Technology program |
| Corequisites: | None |

This course is designed to present mathematical operations used in the medical laboratory. Topics include use of basic math processes, systems of measurement, conversion factors, solutions, and dilutions. Upon completion, students should be able to solve practical problems in the context of the medical laboratory function.

**MLT 118 Medical Lab Chemistry**

| Prerequisites: | Enrollment in the Medical Laboratory Technology program |
| Corequisites: | None |

This course introduces the basic medical laboratory chemical principles. Emphasis is placed on selected topics from inorganic, organic, and biological chemistry. Upon completion, students should be able to demonstrate an understanding of the relationship between basic chemical principles and the medical laboratory function.

**MLT 120 Hematology/Hemostasis I**

| Prerequisites: | Enrollment in the Medical Laboratory Technology program |
| Corequisites: | None |

This course introduces the theory and technology used in analyzing blood cells and the study of hemostasis. Topics include hematology, hemostasis, and related laboratory testing. Upon completion, students should be able to demonstrate theoretical comprehension of hematology/ hemostasis, perform diagnostic techniques, and correlate laboratory findings with disorders.

**MLT 125 Immunohematology I**

| Prerequisites: | Enrollment in the Medical Laboratory Technology program |
| Corequisites: | None |

This course introduces the immune system and response: basic concepts of antigens, antibodies, and their reactions; and applications in transfusion medicine and serodiagnostic testing. Emphasis is placed on immunological and blood banking techniques including concepts of cellular and humoral immunity and pretransfusion testing. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting routine immunological and blood bank procedures.

**MLT 130 Clinical Chemistry I**

| Prerequisites: | Enrollment in the Medical Laboratory Technology program |
| Corequisites: | None |

This course introduces the quantitative analysis of blood and body fluids and their variations in health and disease. Topics include clinical biochemistry, methodologies, instrumentation, and quality control. Upon completion, students should be able to demonstrate theoretical comprehension of clinical chemistry, perform diagnostic techniques, and correlate laboratory findings with disorders.

**MLT 140 Introduction to Microbiology**

| Prerequisites: | Enrollment in the Medical Laboratory Technology program |
| Corequisites: | None |

This course introduces basic techniques and safety procedures in clinical microbiology. Emphasis is placed on the morphology and identification of common pathogenic organisms, aseptic technique, staining techniques, and usage of common media. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting basic clinical microbiology procedures.

**MLT 217 Professional Issues**

| Prerequisites: | Enrollment in the Medical Laboratory Technology program |
| Corequisites: | None |

This course surveys professional issues in preparation for career entry. Emphasis is placed on work readiness and theoretical concepts in microbiology, immunohematology, hematology, and clinical chemistry. Upon completion, students should be able to demonstrate competence in career entry-level areas and be prepared for the national certification examination.

**MLT 220 Hematology/ Hemostasis II**

| Prerequisites: | Enrollment in the Medical Laboratory Technology program |
| Corequisites: | None |

This course covers the theories and techniques used in the advanced analysis of human blood cells and hemostasis. Emphasis is placed on the study of hematologic disorders, abnormal cell development and morphology, and related testing. Upon completion, students should be able to demonstrate a theoretical comprehension and application of abnormal hematology and normal and abnormal hemostasis.

**MLT 230 Clinical Chemistry II**

| Prerequisites: | MLT 130 |
| Corequisites: | None |

This course is designed to supplement the biochemical and physiologic theory presented in MLT 130. Emphasis is placed on special chemistry techniques and methodologies. Upon completion, students should be able to recognize and differentiate technical and physiological causes of unexpected test results.

**MLT 240 Special Clinical Microbiology**

| Prerequisites: | MLT 140 |
| Corequisites: | None |

This course is designed to introduce special techniques in clinical microbiology. Emphasis is placed on advanced areas in microbiology. Upon completion, students should be able to demonstrate theoretical comprehension in performing and interpreting specialized clinical microbiology procedures.

**MLT 254 MLT Practicum I**

| Prerequisites: | Enrollment in the Medical Laboratory Technology program |
| Corequisites: | None |

This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations.
MLT 266 MLT Practicum II 0 0 18 6
Prerequisites: Enrollment in the Medical Laboratory Technology program
Corequisites: None
This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations.

MLT 276 MLT Practicum III 0 0 18 6
Prerequisites: Enrollment in the Medical Laboratory Technology program
Corequisites: None
This course provides entry-level clinical laboratory experience. Emphasis is placed on technique, accuracy, and precision. Upon completion, students should be able to demonstrate entry-level competence on final clinical evaluations.

MLT 280 Special Practice Lab 0 3 0 1
Prerequisites: Enrollment in the Medical Laboratory Technology program
Corequisites: None
This course provides additional medical laboratory experience. Emphasis is placed on laboratory skills and techniques. Upon completion, students should be able to demonstrate proficiency in laboratory skills and techniques.

MNT 240 Industrial Equipment Troubleshooting 1 3 0 2
Prerequisites: ELC 112 or ELC 131
Corequisites: None
This course covers the various service procedures, tools, instruments, and equipment necessary to analyze and repair typical industrial equipment. Emphasis is placed on electro-mechanical and fluid power equipment troubleshooting, calibration, and repair, including common techniques and procedures. Upon completion, students should be able to troubleshoot and repair industrial equipment.

MRI 210 MRI Physics and Equipment 3 0 0 3
Prerequisites: None
Corequisites: None
This course covers the physical principles of image formation, data acquisition, and image processing in magnetic resonance imaging. Emphasis is placed on instrumentation, fundamental pulse sequences, data manipulation, imaging parameters, options, and their effects on image quality. Upon completion, students should be able to understand the principles behind image formation, data acquisition, and image processing in magnetic resonance imaging.

MRI 211 MRI Procedures 4 0 0 4
Prerequisites: None
Corequisites: None
This course covers patient care, magnetic field safety, cross-sectional anatomy, contrast media, and scanning procedures in magnetic resonance imaging. Emphasis is placed on patient assessment and monitoring, safety precautions, contrast agents' use, methods of data acquisition, and identification of cross-sectional anatomy. Upon completion, students should be able to integrate all facets of imaging procedures in magnetic resonance imaging.

MRI 225 MRI Clinical Practicum 0 0 15 5
Prerequisites: None
Corequisites: None
This course provides experience in the computed tomography clinical setting. Emphasis is placed on patient care and positioning, scanning procedures, and image production in magnetic resonance imaging. Upon completion, students should be able to assume a variety of duties and responsibilities within the magnetic resonance clinical environment.

MRI 231 MRI Clinical Practicum 0 0 33 11
Prerequisites: None
Corequisites: None
This course provides experience in the computed tomography clinical setting. Emphasis is placed on patient care and positioning, scanning procedures, and image production in magnetic resonance imaging. Upon completion, students should be able to assume a variety of duties and responsibilities within the magnetic resonance clinical environment.

MTH 110 Fundamentals of Massage 6 12 0 10
Prerequisites: None
Corequisites: BIO 163
This course introduces concepts basic to the role of the massage therapist. Emphasis is placed on beginning theory and techniques of body work as well as skill in therapeutic touch. Upon completion of the course, the student should be able to apply basic practical massage therapy skills.

MTH 120 Therapeutic Massage Applications 6 12 0 10
Prerequisites: MTH 110
Corequisites: None
This course provides an expanded knowledge and skill base for the massage therapist. Emphasis is placed on selected therapeutic approaches throughout the lifespan. Upon completion, students should be able to perform entry level therapeutic massage on various populations.

MTH 125 Ethics of Massage 2 0 0 2
Prerequisites: MTH 120
Corequisites: None
This course is designed to explore issues related to the practice of massage therapy. Emphasis is placed on ethical, legal, professional, and political issues. Upon completion, students should be able to discuss issues relating to the practice of massage therapy, client/therapist relationships as well as ethical issues.

MUS 110 Music Appreciation 3 0 0 3
Prerequisites: ENG 090 and RED 090
Corequisites: None
This course is a basic survey of the music of the Western world. Emphasis is placed on the elements of music, terminology, composers, form, and style within a historical perspective. Upon completion, students should be able to demonstrate skills in basic listening and understanding of the art of music. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts. This course is also available through the Virtual Learning Community (VLC).

MUS 111 Fundamentals of Music 3 0 0 3
Prerequisites: None
Corequisites: None
This course is an introductory course for students with little or no music background. Emphasis is placed on music notation, rhythmic patterns, scales, key signatures, intervals, and chords. Upon completion, students should be able to demonstrate an understanding of the rudiments of music.

MUS 112 Introduction to Jazz 3 0 0 3
Prerequisites: ENG 090 and RED 090
Corequisites: None
This course introduces the origins and musical components of jazz and the contributions of its major artists. Emphasis is placed...
on the development of discriminating listening habits, as well as the investigation of the styles and structural forms of the jazz idiom. Upon completion, students should be able to demonstrate skills in listening and understanding this form of American music. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

MUS 113 American Music 3 0 0 3
Prerequisites: ENG 090 and RED 090
Corequisites: None
This course introduces various musical styles, influences, and composers of the United States from pre-Colonial times to the present. Emphasis is placed on the broad variety of music particular to American culture. Upon completion, students should be able to demonstrate skills in basic listening and understanding of American music. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

MUS 114 Non-Western Music 3 0 0 3
Prerequisites: ENG 090 and RED 090
Corequisites: None
This course provides a basic survey of the music of the non-Western world. Emphasis is placed on non-traditional instruments, sources, and performing practices. Upon completion, students should be able to demonstrate skills in basic listening and understanding of the art of non-Western music. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

MUS 131 Chorus I 0 2 0 1
Prerequisites: None
Corequisites: None
This course provides an opportunity to gain experience singing in a chorus. Emphasis is placed on vocal techniques and the study and performance of a variety of styles and periods of choral literature. Upon completion, students should be able to demonstrate skills needed to participate in choral singing leading to performance.

MUS 132 Chorus II 0 2 0 1
Prerequisites: MUS 131
Corequisites: None
This course provides a continuation of studies begun in MUS 131. Emphasis is placed on vocal techniques and the study and performance of a variety of styles and periods of choral literature. Upon completion, students should be able to demonstrate skills needed to participate in choral singing leading to performance.

MUS 135 Jazz Ensemble I 0 2 0 1
Prerequisite: RED 090 and ENG 090
Corequisites: None
This course provides an opportunity for those who play an appropriate instrument to gain experience playing in a jazz ensemble. Emphasis is placed on jazz ensemble techniques and the study and performance of a variety of styles of jazz literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

MUS 136 Jazz Ensemble II 0 2 0 1
Prerequisites: RED 090, ENG 090 and MUS 153
Corequisites: None
This course is a continuation of MUS 135. Emphasis is placed on jazz ensemble techniques and the study and performance of a variety of styles and periods of jazz literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

MUS 141 Ensemble I
Prerequisites: Audition
Corequisites: None
This course provides an opportunity to perform in any combination of instrumental, vocal, or keyboard groups of two or more. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

MUS 142 Ensemble II
Prerequisites: MUS 141
Corequisites: None
This course is a continuation of MUS 141. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance.

MUS 151 Class Music I 0 2 0 1
Prerequisites: None
Corequisites: None
This course provides group instruction in skills and techniques of the particular instrument or voice for those with little or no previous experience. Emphasis is placed on techniques and styles and the exploration and study of appropriate literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance. Colleges may use a letter suffix to designate a specific instrument or voice, for example MUS 151P for piano. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

MUS 161 Applied Music I 1 2 0 2
Prerequisites: None
Corequisites: None
This course provides individual instruction in the skills and techniques of the particular instrument or voice. Emphasis is placed on techniques and styles and the exploration and study of appropriate literature. Upon completion, students should be able to demonstrate proficiency in the studied skills and repertoire through performance.

MUS 210 History of Rock Music 3 0 0 3
Prerequisites: ENG 090 and RED 090
Corequisites: None
This course is a survey of Rock music from the early 1950’s to the present. Emphasis is placed on musical groups, soloists, and styles related to the evolution of this idiom and on related historical and social events. Upon completion, students should be able to identify specific styles and to explain the influence of selected performers within their respective eras.

MUS 212 American Musical Theatre 3 0 0 3
Prerequisites: None
Corequisites: None
This course covers the origins and development of the musical from Show Boat to the present. Emphasis is placed on the investigation of the structure of the musical and its components.
through listening and analysis. Upon completion, students should be able to demonstrate skills in listening and understanding this form of American music. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/ fine arts.

MUS 213 Opera and Musical Theatre
Prerequisites: None
Corequisites: None
This course covers the origins and development of opera and musical theatre from the works of Claudio Monteverdi to the present. Emphasis is placed on how the structure and components of opera and musicals affect dramaturgy through listening examples and analysis. Upon completion, students should be able to demonstrate analytical and listening skills in understanding both opera and the musical. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/ fine arts.

MUS 214 Electronic Music I
Prerequisites: MUS 111
Corequisites: None
This course provides an opportunity to study and explore various electronic instruments and devices. Emphasis is placed on fundamental MIDI applications and implementation, features and application of sequences, sound modules, and digital keyboards. Upon completion, students should be able to demonstrate proficiency by creation of appropriate musical projects using the equipment and techniques covered. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

MUS 231 Chorus III
Prerequisites: MUS 132
Corequisites: None
This course is a continuation of MUS 132. Emphasis is placed on vocal techniques and the study and performance of a variety of styles and periods of choral literature. Upon completion, students should be able to demonstrate skills needed to participate in choral singing leading to performance.

MUS 232 Chorus IV
Prerequisites: MUS 231
Corequisites: None
This course is a continuation of MUS 231. Emphasis is placed on vocal techniques and the study of styles and periods of choral literature. Upon completion, students should be able to demonstrate skills needed to participate in choral singing leading to performance.

MUS 241 Ensemble III
Prerequisites: MUS 142 Corequisites: None
This course is a continuation of MUS 142. Emphasis is placed on the development of performance skills and the study of a variety of styles and periods of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

MUS 242 Ensemble IV
Prerequisites: MUS 241
Corequisites: None
This course is a continuation of MUS 241. Emphasis is placed on the development of performance skills and the study of styles of ensemble literature. Upon completion, students should be able to demonstrate skills needed to participate in ensemble playing leading to performance. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NET 126</td>
<td>Routing Basics</td>
<td>1-4-0-3</td>
<td>This course focuses on initial router configuration, router software management, routing protocol configuration, TCP/IP, and access control lists (ACLs). Emphasis will be placed on the fundamentals of router configuration, managing router software, routing protocol, and access lists. Upon completion, students should have an understanding of routers and their role in WANs, router configuration, routing protocols, TCP/IP, troubleshooting, and ACLs.</td>
</tr>
<tr>
<td>NET 145</td>
<td>See NOS 120.</td>
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<tr>
<td>NET 155</td>
<td>See NOS 220.</td>
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<tr>
<td>NET 165</td>
<td>See NOS 221.</td>
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<tr>
<td>NET 175</td>
<td>Wireless Technology</td>
<td>2-2-0-3</td>
<td>This course introduces the student to wireless technology and interoperability with different communication protocols. Topics include Wireless Application Protocol (WAP), Wireless Mark-up language (WML), link manager, service discovery protocol, transport layer and frequency band. Upon completion, students should be able to discuss in written and oral form protocols and procedures required for different wireless applications.</td>
</tr>
<tr>
<td>NET 191</td>
<td>Selected Topics in Networking</td>
<td>-</td>
<td>This course provides an opportunity to explore areas of current interest in Networking Technology. Emphasis is placed on subject matter appropriate to networking. Upon completion, students should be able to demonstrate an understanding of the specific area of study.</td>
</tr>
<tr>
<td>NET 193</td>
<td>Selected Topics in Networking</td>
<td>-</td>
<td>This course provides an opportunity to explore areas of current interest in Networking Technology. Emphasis is placed on subject matter appropriate to networking. Upon completion, students should be able to demonstrate an understanding of the specific area of study.</td>
</tr>
<tr>
<td>NET 196</td>
<td>Seminar in Networking Technology:</td>
<td>-</td>
<td>This course introduces the student to wireless technology and interoperability with different communication protocols. Topics include Wireless Application Protocol (WAP), Wireless Mark-up language (WML), link manager, service discovery protocol, transport layer and frequency band. Upon completion, students should be able to discuss in written and oral form protocols and procedures required for different wireless applications.</td>
</tr>
<tr>
<td>NET 198</td>
<td>Seminar in Networking Technology</td>
<td>-</td>
<td>This course provides an opportunity to explore areas of current interest in Networking Technology. Emphasis is placed on the subject matter appropriate to networking. Upon completion, students should be able to demonstrate an understanding of the specific area of study.</td>
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<tr>
<td>NET 222</td>
<td>See SEC 160.</td>
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<tr>
<td>NET 225</td>
<td>Advanced Router and Switching I</td>
<td>1-4-0-3</td>
<td>This course introduces advanced router configurations, advanced LAN switching theory and design, VLANs, Novell IPX, and threaded case studies. Topics include router elements and operations, adding routing protocols to a configuration, monitoring IPX operations on the router, LAN segmentation, and advanced switching methods. Upon completion, students should be able to describe LAN and network segmentation with bridges, routers, and switches and describe a virtual LAN.</td>
</tr>
<tr>
<td>NET 226</td>
<td>Routing &amp; Switching</td>
<td>1-4-0-3</td>
<td>This course introduces WAN theory and design, WAN technology, PPP, Frame Relay, ISDN, and additional case studies. Topics include network congestion problems, TCP/IP transport and network layer protocols, advanced routing and switching configuration, ISDN protocols, PPP encapsulation operations on a router. Upon completion, students should be able to provide solutions for network routing problems, identify ISDN protocols, and describe the Spanning Tree protocol.</td>
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<tr>
<td>NET 230</td>
<td>Wide Area Networking</td>
<td>2-2-0-3</td>
<td>This course is designed to introduce significant aspects of network interconnectivity. Topics include LAN-to-LAN, LAN-to-host, LAN-to-WAN connectivity; Internet connections; and voice-video-data transmission. Upon completion, students should be able to demonstrate an understanding of wide area networking.</td>
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<tr>
<td>NET 231</td>
<td>Intrusion Detection</td>
<td>3-0-0-3</td>
<td>This course introduces the student to intrusion detection methods in use today. Topics include the types of intrusion detection products and planning and placements of intrusion detection solutions. Upon completion, students should be able to plan and implement intrusion detection solution for networks and host based systems.</td>
</tr>
<tr>
<td>NET 232</td>
<td>Security Administration II</td>
<td>2-2-0-3</td>
<td>This course provides the skills necessary to design and implement information security controls. Topics include advanced TCP/IP concepts, network vulnerability analysis, and monitoring. Upon completion, students should be able to distinguish between normal anomalous network traffic, identify common network attack patterns, and implement security solutions.</td>
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<tr>
<td>Course Code</td>
<td>Course Name</td>
<td>Credits</td>
<td>Prerequisites</td>
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<tr>
<td>NET 240</td>
<td>Network Design</td>
<td>3</td>
<td>NET 110</td>
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<td>This course covers the principles of the design of LANs and WANs. Topics include network architecture, transmission systems, traffic management, bandwidth requirements, Internet working devices, redundancy, and broadcast-and versus base-band systems. Upon completion, students should be able to design a network to meet specified business and technical requirements.</td>
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<tr>
<td>NET 250</td>
<td>Advanced Networks I</td>
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<td>NET 110</td>
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<tr>
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<td>This course covers advanced network management, security, and server issues. Topics include server types (file, database, fax, communication, FTP, e-mail, CD-ROM), encryption, authentication, remote monitoring, viruses, and disaster recovery. Upon completion, students should be able to perform advanced monitoring and management of various types of servers and networks.</td>
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<tr>
<td>NET 251</td>
<td>Advanced Networks II</td>
<td>2</td>
<td>NET 250</td>
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<tr>
<td></td>
<td>This course is a continuation of NET 250. Topics include further discussion of network management, monitoring and security, as well as additional work with various types of servers. Upon completion, students should be able to detect and resolve problems relating to network security, performance, and recovery on various types of servers.</td>
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<tr>
<td>NET 260</td>
<td>Internet Development and Support</td>
<td>3</td>
<td>NET 110</td>
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<td>This course covers issues relating to the development and implementation of Internet related tools and services. Topics include Internet organization, site registration, e-mail servers, Web servers, Web page development, legal issues, firewalls, multimedia, TCP/IP, service providers, FTP, list servers, and gateways. Upon completion, students should be able to develop and support the Internet services needed within an organization.</td>
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<tr>
<td>NET 270</td>
<td>Scalable Networks Design</td>
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<td>None</td>
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<td></td>
<td>This course covers principles and techniques of scalable networks. Topics include building multi-layer networks, controlling overhead traffic in growing routed networks, and router capabilities used to control traffic over LANs and WANs. Upon completion, students should be able to design, implement, and improve traffic flow, reliability, redundancy, and performance in enterprise networks.</td>
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<tr>
<td>NET 271</td>
<td>Multi-Layer Networks</td>
<td>1</td>
<td>NET 226 and NOS 230</td>
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<td>This course covers building campus networks using multi-layer switching technologies over a high-speed Ethernet. Topics include improving IP routing performance with multi-layer switching, implementing fault tolerance routing, and managing high bandwidth broadcast while controlling IP multi-cast access to networks. Upon completion, students should be able to install and configure multi-layer enterprise networks and determine the required router configurations to support new services and applications.</td>
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<tr>
<td>NET 272</td>
<td>Remote Access Networks</td>
<td>1</td>
<td>NET 271</td>
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<td>This course covers how to build a remote access network to interconnect central sites to branch offices, home offices, and telecommuters. Topics include enabling on-demand/ permanent connections to the central site, scaling and troubleshooting remote access networks, and maximizing bandwidth utilization over remote links. Upon completion, students should be able to assemble and configure equipment, establish WAN connections, enable protocols/ technologies, allow traffic between sites, and implement accessible access control.</td>
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<tr>
<td>NET 273</td>
<td>Internetworking Support</td>
<td>1</td>
<td>NET 226 and NOS 230</td>
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<td>This course covers how to baseline and troubleshoot in an internetworking environment using routers and switches for multi-protocol client, host and servers. Topics include troubleshooting processes, routing and routed protocols, campus switching; and WAN troubleshooting. Upon completion, students should be able to troubleshoot Ethernet, Fast Ethernet, and Token Ring LANs; and Serial, Frame Relay, and ISDN connections.</td>
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<tr>
<td>NET 280</td>
<td>Networking Project</td>
<td>1</td>
<td>ENG 111, ENG 114, NET 110</td>
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<td>This course introduces topics of current interest in the security industry. Emphasis is placed on evolving technology and trends in security systems. Upon completion, students should be able to critically analyze security issues and topics, establish and deliver informed opinions.</td>
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<tr>
<td>NET 286</td>
<td>Current Trends in Sec Sys</td>
<td>2</td>
<td>SEC 260 and NOS 220</td>
</tr>
<tr>
<td></td>
<td>This course provides an opportunity to complete a significant networking project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, documentation, installation, testing, presentation, and training. Upon completion, students should be able to complete a project from the definition phase through implementation.</td>
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<tr>
<td>NET 289</td>
<td>Networking Project</td>
<td>1</td>
<td>NET 226</td>
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<tr>
<td></td>
<td>This course provides an opportunity to complete a significant networking project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, documentation, installation, testing, presentation, and training. Upon completion, students should be able to complete a project from the definition phase through implementation.</td>
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<tr>
<td>NET 291</td>
<td>Selected Topics in Networking Technology</td>
<td>-</td>
<td>Varies, based on topic</td>
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<td></td>
<td>This course provides an opportunity to explore areas of current interest in Networking Technology. Emphasis is placed on subject matter appropriate to networking. Upon completion, students should be able to demonstrate an understanding of the specific area of study.</td>
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<tr>
<td>NET 292</td>
<td>Selected Topics in Networking Technology</td>
<td>-</td>
<td>Varies, based on topic</td>
</tr>
<tr>
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<td>This course provides an opportunity to explore areas of current interest in Networking Technology. Emphasis is placed on subject matter appropriate to networking. Upon completion, students should be able to...</td>
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</tbody>
</table>
should be able to demonstrate an understanding of the specific area of study.

NOS 110 Operating System Concepts 2 3 0 3
Prerequisites: None
Corequisites: None
This course introduces students to a broad range of operating system concepts, including installation and maintenance. Emphasis is placed on operating system concepts, management, maintenance, and resources required. Upon completion of this course, students will have an understanding of OS concepts, installation, management, maintenance, using a variety of operating systems.

NOS 111 Operating System – DOS 2 2 0 3
Prerequisites: None
Corequisites: None
This course introduces operating system concepts for DOS operating systems. Topics include hardware management, file and memory management, system configuration/optimization, and utilities. Upon completion, students should be able to perform operating system functions at the support level in a DOS environment.

NOS 120 Linux/UNIX Single User 2 2 0 3
Prerequisites: NOS 110
Corequisites: None
This course develops the necessary skills for students to develop both GUI and command line skills for using and customizing a Linux workstation. Topics include Linux file system and access permissions, GNOME Interface, VI editor, X Window System expression pattern matching, I/O redirection, network and printing utilities. Upon completion, students should be able to customize and use Linux systems for command line requirements and desktop productivity roles.

NOS 130 Windows Single User 2 2 0 3
Prerequisites: NOS 110
Corequisites: None
This course introduces operating system concepts for single-user systems. Topics include hardware management, file and memory management, system configuration/optimization, and utilities. Upon completion, students should be able to perform operating systems functions at the support level in a single-user environment.

NOS 220 Linux/UNIX Admin I 2 2 0 3
Prerequisites: NOS 120
Corequisites: None
This course introduces the Linux file system, group administration, and system hardware controls. Topics include installation, creation and maintaining file systems, NIS client and DHCP client configuration, NFS, SMB/Samba, Configure X, Gnome, KDE, basic memory, processes, and security. Upon completion, students should be able to perform system administration tasks including installation, configuring and attaching a new Linux workstation to an existing network.

NOS 221 Linux/UNIX Admin II 2 2 0 3
Prerequisites: NOS 220
Corequisites: None
This course includes skill-building in configuring common network services and security administration using Linux. Topics include server-side setup, configuration, basic administration of common networking services, and security administration using Linux. Upon completion, students should be able to setup a Linux server and configure common network services including security requirements.

NOS 222 Linux/UNIX Admin III 2 2 0 3
Prerequisites: NOS 221
Corequisites: None
This course includes technical topics in preparing an enterprise Linux system for common uses. Topics include advanced study of hardware, installation, boot process, file system administration, software administration, user administration, system administration, kernel services, configuration, securing services, and troubleshooting. Upon completion, students should be able to administer an enterprise Linux system.

NOS 230 Windows Admin I 2 2 0 3
Prerequisites: NOS 130
Corequisites: None
This course covers the installation and administration of a Windows Server network operating system. Topics include managing and maintaining physical and logical devices, access to resources, the server environment, managing users, computers, and groups, and Managing/Implementing Disaster Recovery. Upon completion, students should be able to manage and maintain a Windows Server environment.

NOS 231 Windows Admin II 2 2 0 3
Prerequisites: NOS 230
Corequisites: None
This course covers implementing, managing, and maintaining a Windows Server network infrastructure. Topics include implementing, managing, and maintaining IP addressing, name resolution, network security, routing and remote access, and managing a network infrastructure. Upon completion, students should be able to manage and maintain a Windows Server environment.

NOS 232 Windows Admin III 2 2 0 3
Prerequisites: NOS 231
Corequisites: None
This course covers implementing and administering security in a Windows Server network. Topics include implementing, managing, and troubleshooting security policies, patch management infrastructure, security for network communications, authentication, authorization, and PKI. Upon completion, students should be able to implement, manage, and maintain a Windows Server network infrastructure.

NUR 115 Fundamentals of Nursing 2 3 6 5
Prerequisites: None
Corequisites: None
This course introduces concepts basic to beginning nursing practice. Emphasis is placed on the application of the nursing process to provide and manage care as a member of the discipline of nursing. Upon completion, students should be able to demonstrate beginning competence in caring for individuals with common alterations of health.
This course provides expanded concepts related to nursing care of individuals with psychiatric/mental health needs. Upon completion, students should be able to provide comprehensive nursing care for groups of individuals with common complex alterations in health.

Emphasis is placed on the nurse's role as a member of a multidisciplinary team and as a manager of care for a group of individuals. Upon completion, students should be able to provide comprehensive nursing care for groups of individuals with common complex alterations in health.

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**NUR 116 Nursing of Older Adults**
- **Prerequisites:** NUR 115
- **Corequisites:** None
- This course provides an opportunity to utilize the provider of care and manager of care roles to meet nursing needs of older adults in a variety of settings. Emphasis is placed on the aging process as it applies to normal developmental changes and alterations in health commonly occurring in the older adult. Upon completion, students should be able to apply the nursing process in caring for the older adult.

**NUR 117 Pharmacology**
- **Prerequisites:** None
- **Corequisites:** NUR 133
- This course introduces information concerning sources, effects, legalities, and the safe use of medications as therapeutic agents. Emphasis is placed on nursing responsibility, accountability, pharmocokinetics, routes of medication administration, contraindications and side effects. Upon completion, students should be able to compute dosages and administer medication safely.

**NUR 125 Maternal-Child Nursing**
- **Prerequisites:** NUR 115
- **Corequisites:** None
- This course introduces nursing concepts related to the delivery of nursing care for the expanding family. Emphasis is placed on utilizing the nursing process as a framework for managing/providing nursing care to individuals and families along the wellness-illness continuum. Upon completion, students should be able to utilize the nursing process to deliver nursing care to mothers, infants, children, and families.

**NUR 133 Nursing Assessment**
- **Prerequisites:** None
- **Corequisites:** NUR 117
- This course provides theory and application experience for performing nursing assessment of individuals. Emphasis is placed on interviewing and physical assessment techniques and documentation of findings appropriate for nursing. Upon completion, students should be able to complete a health history and perform a noninvasive physical assessment.

**NUR 135 Adult Nursing I**
- **Prerequisites:** NUR 115
- **Corequisites:** None
- This course introduces concepts related to the nursing care of individuals experiencing acute and chronic alterations in health. Emphasis is placed on utilizing the nursing process as a framework for providing and managing nursing care to individuals along the wellness-illness continuum. Upon completion, students should be able to apply the nursing process to individuals experiencing acute and chronic alterations in health.

**NUR 185 Mental Health Nursing**
- **Prerequisites:** NUR 115
- **Corequisites:** None
- This course includes concepts related to the nursing care of individuals experiencing alterations in social and psychological functioning. Emphasis is placed on utilizing the nursing process to provide and manage nursing care for individuals with common psychiatric disorders or mental health needs. Upon completion, students should be able to apply psychosocial theories in the nursing care of individuals with psychiatric/mental health needs.

**NUR 235 Adult Nursing II**
- **Prerequisites:** NUR 135
- **Corequisites:** None
- This course provides expanded concepts related to nursing care for individuals experiencing complex alterations in health.
OST 131 Keyboarding 1 2 0 2
Prerequisites: None
Corequisites: None
This course covers basic keyboarding skills. Emphasis is placed on the touch system, correct techniques, and development of speed and accuracy. Upon completion, students should be able to key at an acceptable speed and accuracy level using the touch system.

OST 132 Keyboard Skill Building 1 2 0 2
Prerequisites: OST 080 or OST 131
Corequisites: None
This course provides accuracy- and speed-building drills. Emphasis is placed on diagnostic tests to identify accuracy and speed deficiencies followed by corrective drills. Upon completion, students should be able to keyboard rhythmically with greater accuracy and speed.

OST 134 Text Entry and Formatting 2 2 0 3
Prerequisites: OST 080 or OST 131
Corequisites: None
This course is designed to provide the skills needed to increase speed, improve accuracy, and format documents. Topics include letters, memos, tables, and business reports. Upon completion, students should be able to produce mailable documents and key-timed writings at speeds commensurate with employability. This course is also available through the Virtual Learning Community (VLC).

OST 135 Advanced Text Entry and Formatting 3 2 0 4
Prerequisites: OST 134
Corequisites: None
This course is designed to incorporate computer application skills in the generation of office documents. Emphasis is placed on the production of letters, manuscripts, business forms, tabulation, legal documents, and newsletters. Upon completion, students should be able to make independent decisions regarding planning, style, and method of presentation.

OST 136 Word Processing 1 2 0 2
Prerequisites: None
Corequisites: None
This course introduces word processing concepts and applications. Topics include preparation of a variety of documents and mastery of specialized software functions. Upon completion, students should be able to work effectively in a computerized word processing environment. This course is also available through the Virtual Learning Community (VLC).

OST 137 Office Software Applications 1 2 0 2
Prerequisites: None
Corequisites: None
This course introduces the concepts and functions of software that meets the changing needs of the community. Emphasis is placed on the terminology and use of software through a hands-on approach. Upon completion, students should be able to use software in a business environment.

OST 138 Advanced Software Applications 2 2 0 3
Prerequisites: OST 137
Corequisites: None
This course develops proficiency in the utilization of software applications used in business offices through a hands-on approach. Emphasis is placed on in-depth usage of software to create a variety of documents applicable to current business environments. Upon completion, students should be able to master the skills required to design documents that can be customized using the latest software applications.

OST 141 Medical Terms I-Medical Office 3 0 0 3
Prerequisites: None
Corequisites: None
This course uses a language-structure approach to present the terminology and vocabulary that will be encountered in medical office settings. Topics include words that relate to systemic components, conditions, pathology, and disorder remediation in approximately one-half of the systems of the human body. Upon completion, students should be able to relate words to systems, pluralize, define, pronounce, and construct sentences with the included terms.

OST 142 Medical Terms II-Medical Office 3 0 0 3
Prerequisites: OST 141
Corequisites: None
This course is a continuation of OST 141 and continues the study, using a language-structure approach, of medical office terminology and vocabulary. Topics include words that relate to systemic components, conditions, pathology, and disorder remediation in the remaining systems of the human body. Upon completion, students should be able to relate words to systems, pluralize, define, pronounce, and construct sentences with the included terms.

OST 148 Medical Coding, Billing, and Insurance 3 0 0 3
Prerequisites: None
Corequisites: OST 141
This course introduces CPT and ICD coding as they apply to medical insurance and billing. Emphasis is placed on accuracy in coding, forms preparation, and posting. Upon completion, students should be able to describe the steps of the total billing cycle and explain the importance of accuracy.

OST 149 Medical Legal Issues 3 0 0 3
Prerequisites: None
Corequisites: None
This course introduces the complex legal, moral, and ethical issues involved in providing health-care services. Emphasis is placed on the legal requirements of medical practices; the relationship of physician, patient, and office personnel; professional liabilities; and medical practice liability. Upon completion, students should be able to demonstrate a working knowledge of current medical law and accepted ethical behavior.

OST 155 Legal Terminology 3 0 0 3
Prerequisites: None
Corequisites: None
This course covers the terminology appropriate to the legal profession. Topics include legal research, court systems, litigation, civil and criminal law, probate, and personal property, contracts and leases, domestic relations, equity, and corporations. Upon completion, students should be able to spell, pronounce, define, and demonstrate an understanding of the use of these legal terms.

OST 156 Legal Office Procedures 2 2 0 3
Prerequisites: OST 134, OST 136, and OST 155
Corequisites: None
This course covers legal office functions involved in the operation of a law office. Emphasis is placed on procedures in the law office involving the court system, legal research, litigation, probate, and real estate, personal injury, criminal, and civil law. Upon
Students should be able to design and produce professional and ethical considerations of software use. Upon completion, topics include principles of page layout, desktop publishing terminology and applications, and legal and ethical considerations of software use. Upon completion, students should be able to produce a variety of complex business documents.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Coerequisites</th>
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<tbody>
<tr>
<td>OST 164</td>
<td>Text Editing Applications</td>
<td>None</td>
<td>None</td>
<td>None</td>
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<td>OST 181</td>
<td>Introduction to Office Systems</td>
<td>None</td>
<td>None</td>
<td>None</td>
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<td>OST 184</td>
<td>Records Management</td>
<td>None</td>
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<tr>
<td>OST 188</td>
<td>Issues in Office Technology</td>
<td>None</td>
<td>None</td>
<td>None</td>
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<td>OST 198</td>
<td>Seminar in Office Spreadsheets</td>
<td>None</td>
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<td>None</td>
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<td>OST 233</td>
<td>Office Publications Design</td>
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<td>None</td>
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<td>OST 236</td>
<td>Advanced Word/Information Processing</td>
<td>OST 135 or OST 136</td>
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<tr>
<td>OST 241</td>
<td>Medical Office Transcription I</td>
<td>MED 121 or OST 141; OST 134 and OST 164</td>
<td>None</td>
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<td>OST 243</td>
<td>Medical Office Simulation</td>
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<td>OST 247</td>
<td>CPT Coding in the Medical Office</td>
<td>MED 122 or OST 142 and OST 148</td>
<td>None</td>
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<td>OST 248</td>
<td>Diagnostic Coding</td>
<td>MED 122 or OST 142 and OST 148</td>
<td>None</td>
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<td>OST 252</td>
<td>Legal Transcription I</td>
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</table>

This course is unique requirement of the Legal Office Systems concentration in the Office Systems Technology program.
Technology concentration in the Office Systems Technology program.

OST  284  Emerging Technologies  1  2  0  2
Prerequisites:  OST 137
Corequisites:  None
This course provides opportunities to explore emerging technologies. Emphasis is placed on identifying, researching, and presenting current technological topics for class consideration and discussion. Upon completion, students should be able to understand the importance of keeping abreast of technological changes that affect the office professional.

OST  286  Professional Development  3  0  0  3
Prerequisites:  OST 136, OST 164
Corequisites:  None
This course covers the personal competencies and qualities needed to project a professional image in the office. Topics include interpersonal skills, health lifestyles, appearance, attitude, personal and professional growth, multicultural awareness, and professional etiquette. Upon completion, students should be able to demonstrate these attributes in the classroom, office, and society.

OST  289  Office Systems Management  2  2  0  3
Prerequisites:  OST 164 AND OST 136 OR OST 134; CIS 120, CTS 130 OR OST 198; CIS 169, CTS125 OR OST 297; CIS 152 OR OST 138; OST 164, OST 181, OST 236, OST 184, OST 137, OST 233
Corequisites:  None
This course provides a capstone course for the office professional. Topics include administrative office procedures, imaging, communication techniques, ergonomics, and equipment utilization. Upon completion, students should be able to function proficiently in a changing office environment.

OST  296  Seminar in Office Web Technologies  0  0  0  1
Prerequisites:  None
Corequisites:  None
This course provides hands-on experience in designing and editing professional websites for the office. Emphasis is placed on layouts/design, buttons, links, formatting, editing, and publishing. Upon completion, students should be able to create, design, and publish office Web sites.

OST  297  Seminar in Office Presentations  0  0  0  2
Prerequisites:  None
Corequisites:  None
This course provides hands-on experience in designing and editing professional-looking presentations for the office. Emphasis is placed on designing, formatting, and editing graphical presentations. Upon completion, students should be able to design and edit professional business presentations for the automated office.

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Course Title  Class  Lab  Clinical  Credit  Hours Per Week  Work/ Semester  Hours

PBT 100  Phlebotomy Technology  5  2  0  6
Prerequisites:  Enrollment in the Phlebotomy Technology program
Corequisites:  PBT 101
This course provides instruction in the skills needed for the proper collection of blood and other specimens used for diagnostic testing. Emphasis is placed on ethics, legalities, medical terminology, safety and universal precautions, health care delivery systems, patient relations, anatomy and physiology, and specimen collection. Upon completion, students should be able to demonstrate competence in the theoretical comprehension of phlebotomy techniques.

PBT 101  Phlebotomy Practicum  0  0  9  3
Prerequisites:  Enrollment in the Phlebotomy Technology program
Corequisites:  PBT 100
This course provides supervised experience in the performance of venipuncture and microcollection techniques in a clinical facility. Emphasis is placed on patient interaction and application of universal precautions, proper collection techniques, special procedures, specimen handling, and data management. Upon completion, students should be able to safely perform procedures necessary for specimen collections on patients in various health care settings.

PCI 161  Introduction to Instrumentation  0  2  0  1
Prerequisites:  None
Corequisites:  None
This course introduces various industrial and manufacturing process control environments by taking field trips to related industrial facilities. Topics include job descriptions, titles, and opportunities associated with the field of industrial process control instrumentation. Upon completion, students should be able to demonstrate an understanding of the job opportunities available in the field of process control instrumentation.

PCI 261  Process Measurement  2  3  0  3
Prerequisites:  None
Corequisites:  None
This course introduces the concepts associated with the measurement of different process variables. Topics include theory and applications involved with the process variables of flow, level, pressure, and temperature. Upon completion, students should be able to understand basic process measurements and demonstrate the ability to calibrate process control instrumentation.

PCI 262  Introduction to Process Control  3  3  0  4
Prerequisites:  ELC 131
Corequisites:  None
This course introduces process control and related instrumentation devices. Topics include basic process control theory, PID diagrams, and calibration methods associated with transducers, transmitters, control valves, and related process devices. Upon completion, students should be able to understand and troubleshoot basic process control devices and systems.
PED 110 Fitness and Wellness for Life 1 2 0 2
Prerequisites: None
Corequisites: None
This course covers the basics of archery safety and skills. Topics include basic archery safety and skills. Upon completion, students should be able to understand and appreciate the benefits derived from these activities.

PED 128 Golf-Beginning 0 2 0 1
Prerequisites: None
Corequisites: None
This course covers the fundamentals of golf. Topics include the proper grip, stance, alignment, swings for the short and long game, putting, and the rules and etiquette of golf. Upon completion, students should be able to perform the basic golf shots and demonstrate a knowledge of the rules and etiquette of golf. Individualized instruction along with group drills promote stroke development and basic strategy for in-class play.

PED 130 Tennis-Beginning 0 2 0 1
Prerequisites: None
Corequisites: None
This course introduces fundamentals of tennis. Topics include basic strokes, rules, etiquette, and court play. Upon completion, students should be able to play recreational tennis. Individualized instruction along with group drills promote stroke development and basic strategy for in-class play.

PED 138 Archery 0 2 0 1
Prerequisites: None
Corequisites: None
This course covers advanced process control and instrumentation associated with closed and open loop-type process control and systems. Topics include analysis of cascade, distributed control, feedback, and feedforward process control systems using PID and advanced control applications. Upon completion, students should be able to understand and implement advanced process control and instrumentation systems.

PED 139 Bowling-Beginning 0 2 0 1
Prerequisites: None
Corequisites: None
This course covers bowling safety and skills. Topics include proper techniques of stance, bracing, drawing, and releasing, as well as terminology and scoring. Upon completion, students should be able to participate safely in target archery. Individualized instruction on fundamental skills enhances performance during class shooting and competition.

PED 143 Volleyball-Beginning 0 2 0 1
Prerequisites: None
Corequisites: None
This course covers the fundamentals of volleyball. Emphasis is placed on the basics of serving, passing, setting, spiking, blocking, and the rules and etiquette of volleyball. Upon completion, students should be able to participate in recreational volleyball. Individualized instruction enhances fundamental skills along with their use in drills and class play.

PED 147 Ice Skating 0 2 0 1
Prerequisites: None
Corequisites: None
This course introduces the fundamentals of ice skating. Emphasis is placed on basic positioning, balance, and form on ice. Upon completion, students should be able to demonstrate skills necessary for recreational ice skating.

PHI 210 History of Philosophy 3 0 0 3
Prerequisites: ENG 111
Corequisites: None
This course introduces fundamental philosophical issues through an historical perspective. Emphasis is placed on such figures as Plato, Aristotle, Lao-Tzu, Confucius, Augustine, Aquinas, Descartes, Locke, Kant, Wolffstonecraft, Nietzsche, and Sartre. Upon completion, students should be able to identify and distinguish among the key positions of the philosophers studied. Students will be required to complete a research project which will be presented orally to the class.

PHI 215 Philosophical Issues 3 0 0 3
Prerequisites: ENG 111
Corequisites: None
This course introduces fundamental issues in philosophy considering the views of classical and contemporary philosophers. Emphasis is placed on knowledge and belief, appearance and reality, determinism and free will, faith and reason, and justice and inequality. Upon completion, students should be able to identify, analyze, and critique the philosophical components of an issue.

PHI 220 Western Philosophy I 3 0 0 3
Prerequisites: ENG 111
Corequisites: None
This course covers Western intellectual and philosophic thought from the early Greeks through the medievalists. Emphasis is placed on such figures as the pre-Socratics, Plato, Aristotle,
Pharmacy Practice I

Corequisites: None
Prerequisites: None

This course provides instruction in the technical procedures for preparing and dispensing drugs in the hospital and retail settings under supervision of a registered pharmacist. Topics include drug packaging and labeling, outpatient dispensing, hospital dispensing procedures, controlled substance procedures, inventory control, and non-sterile compounding. Upon completion, students should be able to perform basic supervised dispensing techniques in a variety of pharmacy settings.

Pharmacy Calculations

Corequisites: None
Prerequisites: None

This course provides an introduction to the metric, avoirdupois, and apothecary systems of measurement and the calculations used in pharmacy practice. Topics include ratio and proportion, dosage determinations, percentage preparations, reducing and enlarging formulas, dilution and concentration, aliquots, specific gravity and density, and flow rates. Upon completion, students should be able to correctly perform calculations required to properly prepare a medication order.

Applied Physics I

Corequisites: None
Prerequisites: None

This algebra-based course introduces fundamental physical concepts as applied to industrial and service technology fields. Topics include systems of units, problem-solving methods, graphical analyses, vectors, motion, forces, Newton's laws of motion, work, energy, power, momentum, and properties of matter. Upon completion, students should be able to demonstrate an understanding of the principles studied as applied in industrial and service fields.

Physics-Mechanics

Corequisites: None
Prerequisites: MAT 121

This algebra/trigonometry-based course introduces fundamental physical concepts as applied to engineering technology fields. Topics include systems of units, problem-solving methods, graphical analysis, vectors, motion, forces, Newton's laws of motion, work, energy, power, momentum, and properties of matter. Upon completion, students should be able to apply the principles studied to applications in engineering technology fields.

Physics-Sound and Light

Corequisites: None
Prerequisites: PHY 131

This algebra/trigonometry-based course is a study of fundamental physical concepts as applied to engineering technology fields. Topics include systems of units, problem-solving methods, graphical analysis, wave motion, sound, light, and modern physics. Upon completion, students should be able to apply the principles studied to applications in engineering technology fields.

College Physics I

Corequisites: None
Prerequisites: MAT 121, MAT 161 or MAT 171

This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vectors, linear kinematics and dynamics, energy, power, momentum, fluid mechanics, and heat. Upon completion, students should be able to
to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

**PHY 152 College Physics II**  
Prerequisites: PHY 151  
Corequisites: None  
This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include electrostatic forces, electric fields, electric potentials, direct-current circuits, magnetostatic forces, magnetic fields, electromagnetic induction, alternating-current circuits, and light. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

**PHY 133 Modern Topics in Physics**  
Prerequisites: PHY 151  
Corequisites: None  
This course uses algebra- and trigonometry-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include atomic structure, nuclear processes, natural and artificial radioactivity, basic quantum theory, and special relativity. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

**PHY 251 General Physics I**  
Prerequisites: MAT 271  
Corequisites: None  
This course uses calculus-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include units and measurement, vector operations, linear kinematics and dynamics, energy, power, momentum, rotational mechanics, periodic motion, fluid mechanics, and heat. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

**PHY 252 General Physics II**  
Prerequisites: MAT 272, PHY 251  
Corequisites: None  
This course uses calculus-based mathematical models to introduce the fundamental concepts that describe the physical world. Topics include electrostatic forces, electric fields, electric potentials, direct-current circuits, magnetostatic forces, magnetic fields, electromagnetic induction, alternating-current circuits, and light. Upon completion, students should be able to demonstrate an understanding of the principles involved and display analytical problem-solving ability for the topics covered.

**PLA 110 Introduction to Plastics**  
Prerequisites: None  
Corequisites: None  
This course introduces the plastics processing industry, including thermoplastics and thermosets. Emphasis is placed on the description, classification, and properties of common plastics and processes and current trends in the industry. Upon completion, students should be able to describe the differences between thermoplastics and thermosets and recognize the basics of the different plastic processes.

**PLA 115 Polymer Processing**  
Prerequisites: None  
Corequisites: None  
This course introduces theory and hands-on experience in common polymer processing techniques. Topics include injection molding, extrusion, thermoforming, blow molding, casting, roll forming, thermofusion, and other processes. Upon completion, students should be able to understand the setup, operation, and troubleshooting of common plastic processing equipment.

**PLA 120 Injection Molding**  
Prerequisites: None  
Corequisites: None  
This course provides theory and processing experience with the injection molding process. Topics include machine type, molds, controls, machine-polymer part relationship, molding factors, troubleshooting, and molding problems/solutions. Upon completion, students should be able to demonstrate an understanding of machine setup and operation and be able to optimize common injection molding machines.

**PLA 210 Mold Maintenance/Design**  
Prerequisites: None  
Corequisites: None  
This course provides an in-depth study of the design, maintenance, and repair of molds used in the plastics industry. Topics include mold/die components, materials, types, functions, heating/cooling, designs, cleaning, and repair. Upon completion, students should be able to describe and utilize various types and functions of molds and gates and understand typical plastic design rules.

**PLA 215 Polymeric Materials**  
Prerequisites: None  
Corequisites: None  
This course provides an overview of polymeric materials, from commodity grade to advanced/specialty resins. Topics include chemistry, properties, material characterization, testing, and toxicity. Upon completion, students should be able to demonstrate an understanding of the hierarchy of plastics and how it affects material selection, testing, and safety.

**PLA 220 Moldflow**  
Prerequisites: None  
Corequisites: None  
This course introduces flow analysis software. Topics include mold flow design principles, concepts, material databases, model construction, and interpretation of results. Upon completion, students should be able to model a part/runner system, optimize gate location, analyze and interpret fill, and recommend design changes.

**PLA 225 Extrusion**  
Prerequisites: None  
Corequisites: None  
This course provides theory and processing experience with the extrusion molding process. Topics include safe start-up, operation, and shutdown of machines, machine components, blown film, sheet, coating, pipe/profiles, wire coating, and fibers. Upon completion, students should be able to setup, operate, and troubleshoot the extrusion process and its variations.

**PLA 230 Advanced Plastics Manufacturing**  
Prerequisites: PLA 120  
Corequisites: None  
This course covers advanced plastics manufacturing processes. Topics include hands-on experience, material selection, manufacturing cost, process optimization, troubleshooting, and project management. Upon completion, students should be able to understand, perform, and troubleshoot advanced processes in a manufacturing environment.
PLU 110 Modern Plumbing 4 15 0 9
Prerequisites: None
Corequisites: None
This course introduces the tools, equipment, and materials associated with the plumbing industry. Topics include safety, use and care of tools, recognition and assembly of fittings and pipes, and other related topics. Upon completion, students should be able to safely assemble various pipes and fittings in accordance with state code requirements.

PLU 120 Plumbing Applications 4 15 0 9
Prerequisites: None
Corequisites: None
This course covers general plumbing layout, fixtures, and water heaters. Topics include drainage, waste and vent pipes, water service and distribution, fixture installation, water heaters, and other related topics. Upon completion, students should be able to safely install common fixtures and systems in compliance with state and local building codes. This is part one of a two-part course.

PLU 120a Plumbing Applications Part 1 3 6 0 5
Prerequisites: None
Corequisites: None
This course covers general plumbing layout, fixtures, and water heaters. Topics include drainage, waste and vent pipes, water service and distribution, fixture installation, water heaters, and other related topics. Upon completion, students should be able to safely install common fixtures and systems in compliance with state and local building codes. This is part two of a two-part course.

PLU 120b Plumbing Applications Part 2 1 9 0 4
Prerequisites: PLU 120a
Corequisites: None
This course covers general plumbing layout, fixtures, and water heaters. Topics include drainage, waste and vent pipes, water service and distribution, fixture installation, water heaters, and other related topics. Upon completion, students should be able to safely install common fixtures and systems in compliance with state and local building codes. This is part two of a two-part course.

PLU 130 Plumbing Systems 3 9 0 6
Prerequisites: None
Corequisites: None
This course covers the maintenance and repair of plumbing lines and fixtures. Emphasis is placed on identifying and diagnosing problems related to water, drain and vent lines, water heaters, and plumbing fixtures. Upon completion, students should be able to identify and diagnose needed repairs to the plumbing system.

PLU 140 Introduction to Plumbing Codes 1 2 0 2
Prerequisites: None
Corequisites: PLU 192
This course covers plumbing industry codes and regulations. Emphasis is placed on North Carolina regulations and the minimum requirements for plumbing materials and design. Upon completion, students should be able to research and interpret North Carolina plumbing codes.

PLU 150 Plumbing Diagrams 1 2 0 2
Prerequisites: None
Corequisites: None
This course introduces sketching diagrams and interpretation of blueprints applicable to the plumbing trades. Emphasis is placed on plumbing plans for domestic and/or commercial buildings. Upon completion, students should be able to sketch plumbing diagrams applicable to the plumbing trades.

PLU 192 Selected Topics in Plumbing
Prerequisites: Varies, based on topic
Corequisites: PLU 140
This course provides an opportunity to explore areas of current interest in Plumbing. Emphasis is placed on subject matter appropriate to plumbing. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

PME 111 Planters and Sprayers 2 6 0 4
Prerequisites: None
Corequisites: None
This course introduces planters and sprayers as used in modern agriculture. Topics include setup, calibration, tractor preparation, attachment hardware, and environmental issues. Upon completion, students should be able to set up, adjust, and calibrate sprayers and planters and set up tractors to accommodate attachment hardware. This course is a unique concentration requirement of the Agricultural Systems concentration in the Heavy Equipment and Transport Technology program.

PME 112 Consumer Products 3 2 0 4
Prerequisites: None
Corequisites: None
This course introduces garden tractors, equipment, and attachments. Topics include electrical, hydraulic, and power trains and the operation, diagnosis, adjustment, and repair of lawn and turf equipment. Upon completion, students should be able to set up, adjust, diagnose, and repair lawn and garden equipment. This course is a unique concentration requirement of the Agricultural Systems concentration in the Heavy Equipment and Transport Technology program.

PME 113 Construction Equipment Repair 1 2 0 2
Prerequisites: None
Corequisites: None
This course introduces construction equipment repair. Topics include product identification, care of tools, product nomenclature, fasteners, and proper lifting and blocking of construction equipment. Upon completion, students should be able to identify products and properly block and secure construction equipment.

PME 113a Construction Equipment Repair 1 1 0 1
Prerequisites: None
Corequisites: None
This is part 1 of a course that introduces construction equipment repair. Topics include product identification, care of tools, product nomenclature, fasteners, and proper lifting and blocking of construction equipment. Upon completion, students should be able to identify products and properly block and secure construction equipment. This course is a unique concentration requirement of the Construction Systems concentration in the Medium/Heavy Duty Vehicles Systems Technology program.

PME 113b Construction Equipment Repair 0 2 0 1
Prerequisites: PME 113a
Corequisites: None
This is part 2 of a course that introduces construction equipment repair. Topics include product identification, care of tools, product nomenclature, fasteners, and proper lifting and blocking of construction equipment. Upon completion, students should be able to identify products and properly block and secure construction equipment. This course is a unique concentration requirement of the Construction Systems concentration in the Medium/Heavy Duty Vehicles Systems Technology program.
<table>
<thead>
<tr>
<th>COURSE DESCRIPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PME 117</strong> Equipment Braking Systems</td>
</tr>
<tr>
<td>Prerequisites: None</td>
</tr>
<tr>
<td>Corequisites: None</td>
</tr>
<tr>
<td>This course covers fundamental theory, adjustments, and repair of hydraulic and pneumatic braking systems used primarily in mobile construction equipment. Emphasis is placed on braking systems used in construction equipment including pneumatic, hydraulic, dynamic, and inboard brakes. Upon completion, students should be able to use proper diagnostic procedures to identify, repair, or replace components.</td>
</tr>
<tr>
<td>Corequisites: None</td>
</tr>
<tr>
<td><strong>PME 211</strong> Advanced Equipment Repair</td>
</tr>
<tr>
<td>Prerequisites: None</td>
</tr>
<tr>
<td>Corequisites: None</td>
</tr>
<tr>
<td>This course provides advanced training in equipment repair through hands-on training along with additional training aids. Emphasis is placed on systems and components found on construction equipment. Upon completion, students should be able to adjust, troubleshoot, and repair most construction equipment systems.</td>
</tr>
<tr>
<td><strong>PME 221</strong> Construction Equipment Servicing</td>
</tr>
<tr>
<td>Prerequisites: None</td>
</tr>
<tr>
<td>Corequisites: None</td>
</tr>
<tr>
<td>This course covers the servicing requirements for construction equipment. Topics include pre-delivery, after-sales check, routine servicing, and thousand-hour service. Upon completion, students should be able to locate service points, make minor service adjustments, and perform other routine servicing.</td>
</tr>
<tr>
<td><strong>POL 110</strong> Introduction to Political Science</td>
</tr>
<tr>
<td>Prerequisites: ENG 090, RED 090, or placement</td>
</tr>
<tr>
<td>Corequisites: None</td>
</tr>
<tr>
<td>This course introduces basic political concepts used by governments and addresses a wide range of political issues. Topics include political theory, ideologies, legitimacy, and sovereignty in democratic and non-democratic systems. Upon completion, students should be able to discuss a variety of issues inherent in all political systems and draw logical conclusions in evaluating these systems. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.</td>
</tr>
<tr>
<td><strong>PSY 110</strong> Life Span Development</td>
</tr>
<tr>
<td>Prerequisites: None</td>
</tr>
<tr>
<td>Corequisites: None</td>
</tr>
<tr>
<td>This course provides an introduction to the study of human growth and development. Emphasis is placed on the physical, cognitive, and psychosocial aspects of development from conception to death. Upon completion, students should be able to demonstrate knowledge of development across the life span and apply this knowledge to their specific field of study.</td>
</tr>
</tbody>
</table>
### PSY 150 General Psychology

**Prerequisites:** ENG 090, RED 090, or placement

**Corequisites:** None

This course provides an overview of the scientific study of human behavior. Topics include history, methodology, biopsychology, sensation, perception, learning, motivation, cognition, abnormal behavior, personality theory, social psychology, and other relevant topics. Upon completion, students should be able to demonstrate a basic knowledge of the science of psychology. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences. This course is also available through the Virtual Learning Community (VLC).

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSY 150</td>
<td>General Psychology</td>
<td>3</td>
<td>None</td>
</tr>
</tbody>
</table>

### PSY 237 Social Psychology

**Prerequisites:** PSY 150 or SOC 210

**Corequisites:** None

This course introduces the study of individual behavior within social contexts. Topics include affiliation, attitude formation and change, conformity, altruism, aggression, attribution, interpersonal attraction, and group behavior. Upon completion, students should be able to demonstrate an understanding of the basic principles of social influence on behavior. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

### PSY 239 Psychology of Personality

**Prerequisites:** PSY 150

**Corequisites:** None

This course covers major personality theories and personality research methods. Topics include psychoanalytic, behavioralistic, social learning, cognitive, humanistic, and trait theories including supporting research. Upon completion, students should be able to compare and contrast traditional and contemporary approaches to the understanding of individual differences in human behavior. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

### PSY 241 Developmental Psychology

**Prerequisites:** PSY 150

**Corequisites:** None

This course is a study of human growth and development. Emphasis is placed on major theories and perspectives as they relate to the physical, cognitive, and psychosocial aspects of development from conception to death. Upon completion, students should be able to demonstrate knowledge of development across the life span. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences. This course is also available through the Virtual Learning Community (VLC).

### PSY 246 Adolescent Psychology

**Prerequisites:** PSY 150

**Corequisites:** None

This course provides an overview of the behavior patterns, life changes, and social issues that accompany the developmental stage of adolescence. Topics include developmental theories; physical, cognitive and psychosocial growth; transitions to young adulthood; and sociocultural factors that influence adolescent roles in home, school and community. Upon completion, students should be able to identify typical and atypical adolescent behavior patterns as well as appropriate strategies for interacting with adolescents. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

### PSY 259 Human Sexuality

**Prerequisites:** PSY 150

**Corequisites:** None

This course provides the biological, psychological, and sociocultural aspects of human sexuality and related research. Topics include reproductive biology, sexual and psychosexual development, sexual orientation, contraception, sexually transmitted diseases, sexual disorders, theories of sexuality, and related issues. Upon completion, students should be able to demonstrate an overall knowledge and understanding of human sexuality. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

### PSY 263 Educational Psychology

**Prerequisites:** PSY 150

**Corequisites:** None

This course examines the application of psychological theories and principles to the educational process and setting. Topics include learning and cognitive theories, achievement motivation, teaching and learning styles, teacher and learner roles, assessment, and developmental issues. Upon completion, students should be able to demonstrate an understanding of the application of psychological theory to educational practice. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.

### PSY 261 Abnormal Psychology

**Prerequisites:** PSY 150

**Corequisites:** None

This course provides an examination of the various psychological disorders, as well as theoretical, clinical, and experimental perspectives of the study of psychopathology. Emphasis is placed on terminology, classification, etiology, assessment, and treatment of the major disorders. Upon completion, students should be able to distinguish between normal and abnormal behavior patterns as well as demonstrate knowledge of etiology, symptoms, and therapeutic techniques. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences. This course is also available through the Virtual Learning Community (VLC).

### PTC 110 Industrial Environment

**Prerequisites:** None

**Corequisites:** None

This course introduces the pharmaceutical industry, including a broad overview of work in this field. Emphasis is placed on good manufacturing practices (GMP), work conduct, company organization, job expectations, personal safety, hygiene, and company rules and regulations. Upon completion, students should be able to follow good manufacturing practice regulations and inspect a pharmaceutical manufacturing facility for compliance with GMP.

### PTC 120 Pharmaceutical Quality Control

**Prerequisites:** MAT 121, PTC 110

**Corequisites:** None

This course covers the principles and techniques of quality control as found in the pharmaceutical industry. Emphasis is placed on lot inspection, sampling procedures, control charts, vendor auditing, statistical analysis, and Military Standard 105. Upon completion, students should be able to apply and follow the appropriate statistical sampling plans for Pharmaceutical Product Lot Acceptance.

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PTC 193 Selected Topics in Industrial Pharmaceutical Technology 3 2 0 4
Prerequisites: Varies, based on topic
Corequisites: None
This course provides an opportunity to explore areas of current interest in Industrial Pharmaceutical Technology. Emphasis is placed on subject matter appropriate to industrial pharmaceutical. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

PTC 210 Pharmaceutical Industrial Processes 3 2 0 4
Prerequisites: PTC 120
Corequisites: None
This course examines the manufacturing processes for selected pharmaceutical dosage forms. Emphasis is placed on manufacturing and testing of tablets, capsules, sustained release drugs, solutions, emulsions, suspensions, creams, ointments, aerosols, and sterile products. Upon completion, students should be able to demonstrate the processing steps and test procedures for these dosage forms.

PTC 214 Parenteral Processes 3 2 0 4
Prerequisites: PTC 120
Corequisites: PTC 212
This course covers quality assurance for injectable products. Emphasis is placed on environmental monitoring and sterility, pyrogen, particulate, and package integrity testing. Upon completion, students should be able to demonstrate competence in these test procedures.

PTC 222 Pharmaceutical Process Control 2 2 0 3
Prerequisites: PTC 210
Corequisites: None
This course provides a systematic study of the control of all processes within the pharmaceutical industry. Topics include production economics, plant layout, computer-integrated manufacturing, planning and controls, materials management, routing and scheduling, progress reports, and relationship with quality control. Upon completion, students should be able to demonstrate an understanding of process flow controls, economic considerations, and materials management in modern pharmaceutical manufacturing.

PTC 226 Validation 3 0 0 3
Prerequisites: PTC 210, PTC 214
Corequisites: None
This course covers the methods used in pharmaceutical process and product validation. Emphasis is placed on manufacturing processes, specific dosage forms, FDA rationale, and documentation requirements. Upon completion, students should be able to write a validation protocol and perform validation studies for a variety of pharmaceutical applications.

PTC 228 Pharmaceutical Issues 1 0 0 1
Prerequisites: PTC 110
Corequisites: None
This course provides a forum for discussion of current pharmaceutical topics. Emphasis is placed on events, news, regulations, and technology in pharmaceutical manufacturing. Upon completion, students should be able to demonstrate an understanding of the dynamic nature of the pharmaceutical industry.

RAD 110 Radiography Introduction and Patient Care 2 3 0 3
Prerequisites: Enrollment in Radiography program
Corequisites: RAD 111, RAD 151
This course provides the knowledge and skills necessary to perform standard radiographic procedures. Emphasis is placed on radiography of the chest, abdomen, extremities, spine, and pelvis. Upon completion, students should be able to demonstrate competence in these areas.

RAD 111 Radiographic Procedures I 3 3 0 4
Prerequisites: Enrollment in the Radiography program
Corequisites: RAD 110, RAD 151
This course provides the knowledge and skills necessary to perform standard radiographic procedures. Emphasis is placed on radiography of the skull, bony thorax, and gastrointestinal, biliary, and urinary systems. Upon completion, students should be able to demonstrate competence in these areas.

RAD 112 Radiographic Procedures II 3 3 0 4
Prerequisites: RAD 110, RAD 111, RAD 151
Corequisites: RAD 121, RAD 161
This course provides the knowledge and skills necessary to perform standard radiographic procedures. Emphasis is placed on radiography of the chest, abdomen, extremities, spine, and pelvis. Upon completion, students should be able to demonstrate competence in these areas.

RAD 121 Radiographic Imaging I 2 3 0 3
Prerequisites: RAD 110, RAD 111, RAD 112, RAD 151, RAD 161
Corequisites: None
This course covers factors of image quality and methods of exposure control. Topics include density, contrast, recorded detail, distortion, technique charts, manual and automatic exposure control, and tube rating charts. Upon completion, students should be able to demonstrate an understanding of exposure control and the effects of exposure factors on image quality.

RAD 122 Radiographic Imaging II 1 3 0 2
Prerequisites: RAD 112, RAD 121, RAD 161
Corequisites: RAD 131, RAD 171
This course covers image receptor systems and processing principles. Topics include film, film storage, processing, intensifying screens, grids, and beam limitation. Upon completion, students should be able to demonstrate the principles of selection and usage of imaging accessories to produce quality images.
COURSE DESCRIPTIONS

RAD 131 Radiographic Physics I 1 3 0 2
Prerequisites: None
Corequisites: None
This course introduces the fundamental principles of physics that underlie diagnostic X-ray production and radiography. Topics include electromagnetic waves, electricity and magnetism, electrical energy, and power and circuits as they relate to radiography. Upon completion, students should be able to demonstrate an understanding of basic principles of physics as they relate to the operation of radiographic equipment.

RAD 151 Radiographic Clinical Education I 0 0 6 2
Prerequisites: Enrollment in the Radiography program
Corequisites: RAD 110, RAD 111
This course introduces patient management and basic radiographic procedures in the clinical setting. Emphasis is placed on mastering positioning of the chest and extremities, manipulating equipment, and applying principles of ALARA. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

RAD 161 Radiographic Clinical Education II 0 0 15 5
Prerequisites: RAD 110, RAD 111, RAD 151
Corequisites: RAD 112, RAD 121
This course provides additional experience in patient management and in more complex radiographic procedures. Emphasis is placed on mastering positioning of the spine, pelvis, head and neck, and thorax and adapting procedures to meet patient variations. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

RAD 171 Radiographic Clinical Education III 0 0 12 4
Prerequisites: RAD 112, RAD 121, RAD 161
Corequisites: RAD 122, RAD 131
This course provides experience in patient management specific to fluoroscopic and advanced radiographic procedures. Emphasis is placed on applying appropriate technical factors to all studies and mastering positioning of gastrointestinal and urological studies. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

RAD 211 Radiographic Procedures III 2 3 0 3
Prerequisites: RAD 122, RAD 131, RAD 171
Corequisites: RAD 231, RAD 241, RAD 251
This course provides the knowledge and skills necessary to perform standard and specialty radiographic procedures. Emphasis is placed on radiographic specialty procedures, pathology, and advanced imaging. Upon completion, students should be able to demonstrate competence in these areas.

RAD 231 Radiographic Physics II 1 3 0 2
Prerequisites: RAD 122 and RAD 131 or RAD 171
Corequisites: RAD 211, RAD 241, RAD 251
This course continues the study of physics that underlie diagnostic X-ray production and radiographic and fluoroscopic equipment. Topics include X-ray production, electromagnetic interactions with matter, X-ray devices, and equipment circuitry. Upon completion, students should be able to demonstrate an understanding of the application of physical concepts as related to image production.

RAD 241 Radiobiology/Protection 2 0 0 2
Prerequisites: RAD 122, RAD 131, RAD 171
Corequisites: RAD 211, RAD 231, RAD 251
This course covers the principles of radiation protection and radiobiology. Topics include the effects of ionizing radiation on body tissues, protective measures for limiting exposure to the patient and personnel, and radiation monitoring devices. Upon completion, students should be able to demonstrate an understanding of the effects and uses of radiation in diagnostic radiology.

RAD 245 Rad Quality Management 1 3 0 2
Prerequisites: RAD 211, RAD 231, RAD 241, RAD 251
Corequisites: RAD 261, RAD 290
This course provides an overview of imaging concepts and introduces methods of quality assurance. Topics include a systematic approach for image evaluation and analysis of imaging service and quality assurance. Upon completion, students should be able to establish and administer a quality assurance program and conduct a critical review of images.

RAD 251 Radiographic Clinical Education IV 0 0 21 7
Prerequisites: RAD 122, RAD 131, RAD 171
Corequisites: RAD 211, RAD 231, RAD 241
This course provides the opportunity to continue mastering all basic radiographic procedures and to attain experience in advanced areas. Emphasis is placed on equipment operation, pathological recognition, pediatric and geriatric variations, and a further awareness of radiation protection requirements. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

RAD 261 Radiographic Clinical Education V 0 0 21 7
Prerequisites: RAD 211, RAD 231, RAD 241, RAD 251
Corequisites: RAD 245, RAD 290
This course is designed to enhance expertise in all radiographic procedures, patient management, radiation protection, and image production and evaluation. Emphasis is placed on developing an autonomous approach to the diversity of clinical situations and successfully adapting to those procedures. Upon completion, students should be able to demonstrate successful completion of clinical objectives.

RAD 271 Radiography Capstone 0 3 0 1
Prerequisites: RAD 211, RAD 231, RAD 241, RAD 251
Corequisites: RAD 245, RAD 261
This course provides an opportunity to exhibit problem-solving skills required for certification. Emphasis is placed on critical thinking and integration of didactic and clinical components. Upon completion, students should be able to demonstrate the knowledge required of any entry-level radiographer.

RAD 290 See RAD 271.

REA 111 Introduction to Real Estate 2 0 0 2
Appraisal R-1
Prerequisites: None
Corequisites: None
This course introduces the entire valuation process, with specific coverage of residential neighborhood and property analysis. Topics include basic real property law, concepts of value and operation of real estate markets, mathematical and statistical concepts and radiographic and fluoroscopic equipment. Upon completion, students should be able to demonstrate adequate preparation for valuation principles and practices.

REA 112 Valuation Principles and Practices R-2 2 0 0 2
Prerequisites: REA 111
Corequisites: None
This course introduces procedures used to develop an estimate of value and how the various principles of value relate to the application of such procedures. Topics include the sales comparison approach, site valuation, sales comparison, the cost.
approach, the income approach, and reconciliation. Upon completion, students should be able to complete the Uniform Residential Appraisal Report (URAR).

**REA 113 Applied Residential Property Valuation R-3**

Prerequisites: REA 112
Corequisites: REA 111
This course covers the laws and standards practiced by appraisers in the appraisal of residential 1-4 unit properties and small farms. Topics include Financial Institutions Reform and Recovery Enforcement Act (FIRREA), and North Carolina statutes and rules. Upon completion, students should be able to demonstrate eligibility to sit for the NC Appraisal Board license trainee examination.

**REA 114 Uniform Standards of Professional Appraisal Practice (USPAP) R-4**

Prerequisites: REA 113
Corequisites: None
This course introduces all aspects of the appraiser’s conduct, ethics, and competency. Topics include appraisal standards, reviews, reports, and the confidentiality provisions as set forth by the North Carolina Appraisal Board. Upon completion, students should be able to sit for the National USPAP examination.

**REA 210 Intro Income Prop App G-1**

Prerequisites: REA 113, REA 114
Corequisites: None
This course introduces concepts and techniques used to appraise real estate income properties. Topics include real estate market analysis, property analysis and site valuation, how to use financial calculators, present value, NOI, and before-tax cash flow. Upon completion, students should be able to estimate income property values using direct capitalization and to sit for the NC Certified Residential Appraiser examination.

**REA 212 Advanced Income Capitalization Procedures G-2**

Prerequisites: REA 210
Corequisites: None
This course expands direct capitalization techniques and introduces yield capitalization. Topics include yield rates, discounted cash flow, financial leverage, and traditional yield capitalization formulas. Upon completion, students should be able to estimate the value of income producing property using yield capitalization techniques.

**REA 213 Applied Income Property Valuation G-3**

Prerequisites: REA 212
Corequisites: None
This course covers the laws, rules, and standards pertaining to the principles and practices applicable to the appraisal of income properties. Topics include FIRREA, USPAP, Uniform Commercial and Industrial Appraisal Report (UCIAR) form, North Carolina statutes and rules, and case studies. Upon completion, students should be able to prepare a narrative report that conforms to the USPAP and sit for the NC Certified General Appraisal examination.

**REA 214 Basic Appraisal Principle G-1**

Prerequisites: None
Corequisites: None
This course introduces the student to the entire concept of real estate appraisal and the valuation process. Topics include real property concepts and characteristics, legal considerations, influences on real estate value, types of values, and economic principles. Upon completion, students should be able to present an overview of real estate markets and analysis, and ethics, applying it to appraisal theory and practice.

**REA 215 Basic Appraisal Procedure 2 0 0 2**

Prerequisites: REA-214
Corequisites: None
This course introduces procedures used to develop an estimate of value and how the various principles of value relate to the application of such procedures. Topics include an overview of approaches to value, valuation procedures, property description and residential applications. Upon completion, students should be able to identify and utilize the approaches to value for residential properties.

**REA 217 National USPAP G-1**

Prerequisites: REA-215
Corequisites: None
This course introduces all aspects of the appraiser’s conduct, ethics and competency. Topics include appraisal standards, reviews, reports, and the confidentiality provisions as set forth by the Appraisal Standards Board. Upon completion, students should be able to sit for the national Uniform Standards of Professional Appraisal Practice (USPAP) examination.

**REA 219 Residential Market Analysis 1 0 0 1**

Prerequisites: REA-217
Corequisites: None
This course introduces students to the components of a market analysis and how to test for and analyze highest and best use. Topics include market fundamentals, characteristics and definitions, supply/demand analysis, use of market analysis, test constraints and application of the highest/best use, special considerations and case studies. Upon completion, students should be able to analyze residential markets and know the test constraints for highest and best use.

**RED 001 Study Skills Lab**

Prerequisites: None
Corequisites: None
Designed to support courses across the curriculum by offering study skills and providing assistance with reading skills such as literal and inferential comprehension, vocabulary skills, recalling details, finding main ideas, and retention of materials.

**RED 070 Essential Reading Skills**

Prerequisites: None
Corequisites: None
This course is designed for those with limited reading skills. Emphasis is placed on basic word attack skills, vocabulary, transitional words, paragraph organization, basic comprehension skills, and learning strategies. Upon completion, students should be able to demonstrate competence in the skills required for RED 080.

**RED 080 Introduction to College Reading**

Prerequisites: RED 070 or ENG 075 or placement
Corequisites: None
This course introduces effective reading and inferential thinking skills in preparation for RED 090. Emphasis is placed on vocabulary, comprehension, and reading strategies. Upon completion, students should be able to determine main ideas and supporting details, recognize basic patterns of organization, draw conclusions, and understand vocabulary in context.
RED 090  Improved College Reading 3 2 0 4
Prerequisites: RED 080 or ENG 085 or placement
Corequisites: None
This course is designed to improve reading and critical thinking skills. Topics include vocabulary enhancement; extracting implied meaning; analyzing author’s purpose, tone, and style; and drawing conclusions and responding to written material. Upon completion, students should be able to comprehend and analyze college-level reading material.

REL 110  World Religions 3 0 0 3
Prerequisites: ENG 090, RED 090, or placement
Corequisites: None
This course introduces the world’s major religious traditions. Topics include Primals religions, Hinduism, Buddhism, Islam, Judaism, and Christianity. Upon completion, students should be able to identify the origins, history, beliefs, and practices of the religions studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

REL 111  Eastern Religions 3 0 0 3
Prerequisites: ENG 090, RED 090, or placement
Corequisites: None
This course introduces the major Asian religious traditions. Topics include Hinduism, Buddhism, Taoism, Confucianism, and Shinto. Upon completion, students should be able to identify the origins, history, beliefs, and practices of the religions studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

REL 112  Western Religions 3 0 0 3
Prerequisites: ENG 090, RED 090, or placement
Corequisites: None
This course introduces the major western religious traditions. Topics include Zoroastrianism, Islam, Judaism, and Christianity. Upon completion, students should be able to identify the origins, history, beliefs, and practices of the religions studied. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

REL 211  Introduction to Old Testament 3 0 0 3
Prerequisites: ENG 090, RED 090, or placement
Corequisites: None
This course is a survey of the literature of the Hebrews with readings from the law, prophets, and other writings. Emphasis is placed on the use of literary, historical, archeological, and cultural analysis. Upon completion, students should be able to use the tools of critical analysis to read and understand Old Testament literature. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

REL 212  Introduction to New Testament 3 0 0 3
Prerequisites: ENG 090, RED 090, or placement
Corequisites: None
This course is a survey of the literature of first-century Christianity with readings from the gospels, Acts, and the Pauline and pastoral letters. Topics include the literary structure, audience, and religious perspective of the writings, as well as the historical and cultural context of the early Christian community. Upon completion, students should be able to use the tools of critical analysis to read and understand New Testament literature. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts.

RLS 112  Broker Prelicensing 5 0 0 5
Prerequisites: None
Corequisites: None
This course provides basic instruction in real estate principles and practices. Topics include law, finance, brokerage, closing, valuation, management, taxation, mathematics, construction, land use, property insurance, and NC License Law and Commission Rules. Upon completion, students should be able to demonstrate basic knowledge and skills necessary for real estate sales.

RLS 117  Real Estate Broker 4 0 0 4
Prerequisites: RLS 112
Corequisites: None
This course consists of advanced-level instruction on a variety of topics related to Real Estate law and brokerage practices. Topics include: real estate brokerage, finance and sales, RESPA, fair housing issues, selected NC Real Estate License Law and NC Real Estate Commission Rule issues. Upon completion, students should be able to demonstrate knowledge of real estate brokerage, law and finance.

SAB 110  Substance Abuse Overview 3 0 0 3
Prerequisites: None
Corequisites: None
This course provides an overview of the core concepts in substance abuse and dependence. Topics include the history of drug use/abuse, effects on societal members, treatment of addiction, and preventive measures. Upon completion, students should be able to demonstrate knowledge of the etiology of drug abuse, addiction, prevention, and treatment.

SAB 120  Intake and Assessment 3 0 0 3
Prerequisites: None
Corequisites: None
This course develops processes for establishment of client rapport, elicitation of client information on which therapeutic activities are based, and stimulation of client introspection. Topics include diagnostic criteria, functions of counseling, nonverbal behavior, collaterals and significant others, dual diagnosis, client strengths and weaknesses, uncooperative clients, and crisis interventions. Upon completion, students should be able to establish communication with clients, recognize disorders, obtain information for counseling, and terminate the counseling process.

SAB 125  SAB Case Management 2 2 0 3
Prerequisites: SAB 120
Corequisites: None
This course provides case management activities, including record keeping, recovery issues, community resources, and continuum of care. Emphasis is placed on establishing a systematic approach to monitor the treatment plan and maintain quality of life. Upon completion, students should be able to assist clients in the continuum of care as an ongoing recovery process and develop agency networking.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Corequisites</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAB 135</td>
<td>Addictive Process</td>
<td>3 0 0</td>
<td></td>
<td>None</td>
<td>This course explores the physical, emotional, psychological, and cultural aspects of the addictive process. Emphasis is placed on addictions to food, sex, alcohol, drugs, work, gambling, and relationships. Upon completion, students should be able to identify the effects, prevention strategies, and treatment methods associated with addictive disorders.</td>
</tr>
<tr>
<td>SAB 210</td>
<td>Substance Abuse Counseling</td>
<td>2 2 0</td>
<td></td>
<td>None</td>
<td>This course provides theory and skills acquisition by utilizing intervention strategies designed to obtain therapeutic information, support recovery, and prevent relapse. Topics include counseling individuals and dysfunctional families, screening instruments, counseling techniques and approaches, recovery and relapse, and special populations. Upon completion, students should be able to discuss issues critical to recovery, identify intervention models, and initiate a procedure culminating in cognitive/behavioral change.</td>
</tr>
<tr>
<td>SAB 220</td>
<td>Group Techniques/Therapy</td>
<td>2 2 0</td>
<td></td>
<td>HSE 112</td>
<td>This course provides a practical guide to diverse methods of group therapy models used in the specific treatment of substance abuse and addiction. Emphasis is placed on the theory and practice of group therapy models specifically designed to treat the cognitive distortions of addiction and substance abuse. Upon completion, students should be able to skillfully practice the group dynamics and techniques formulated for substance abuse and addiction.</td>
</tr>
<tr>
<td>SAB 240</td>
<td>Substance Abuse</td>
<td>3 0 0</td>
<td></td>
<td>None</td>
<td>This course introduces systems of professional standards, values, and issues in substance abuse counseling. Topics include confidentiality, assessment of personal values, professional responsibilities, competencies, and ethics relative to multicultural counseling and research. Upon completion, students should be able to understand and discuss multiple ethical issues applicable to counseling and apply various decision-making models to current issues.</td>
</tr>
<tr>
<td>SEC 110</td>
<td>Security Concepts</td>
<td>3 0 0</td>
<td></td>
<td>RED 090</td>
<td>This course introduces the concepts and issues related to securing information systems and the development of policies to implement information security controls. Topics include the historical view of networking and security, security issues, trends, security resources, and the role of policy, people, and processes in information security. Upon completion, students should be able to identify information security risks, create an information security policy, and identify processes to implement and enforce policy.</td>
</tr>
<tr>
<td>SEC 150</td>
<td>Secure Communications</td>
<td>2 2 0</td>
<td></td>
<td>SEC 110; and NET 110 or NET 125</td>
<td>This course provides an overview of current technologies used to provide secure transport of information across networks. Topics include data integrity through encryption, Virtual Private Networks, SSL, SSH, and IPSec. Upon completion, students should be able to implement secure data transmission technologies.</td>
</tr>
<tr>
<td>SEC 160</td>
<td>Secure Administration I</td>
<td>2 2 0</td>
<td></td>
<td>SEC 110; and NET 110 or NET 125</td>
<td>This course provides an overview of security administration and fundamentals of designing security architectures. Topics include networking technologies, TCP/IP concepts, protocols, network traffic analysis, monitoring, and security best practices. Upon completion, students should be able to identify normal network traffic using network analysis tools and design basic security defenses.</td>
</tr>
<tr>
<td>SEC 170</td>
<td>SOHO Security</td>
<td>2 2 0</td>
<td></td>
<td>None</td>
<td>This course introduces security principles and topics related to the small office/home office networking environment. Topics include network topologies, network protocols, security issues, and best practices for SOHO environments. Upon completion, students should be able to design, setup, secure, and manage a small office/home office network.</td>
</tr>
<tr>
<td>SEC 210</td>
<td>Intrusion Detection</td>
<td>2 2 0</td>
<td></td>
<td>SEC 160</td>
<td>This course introduces the student to intrusion detection methods in use today. Topics include the types of intrusion detection products, traffic analysis, and planning and placement of intrusion detection solutions. Upon completion, students should be able to plan and implement intrusion detection solution for networks and host based systems.</td>
</tr>
<tr>
<td>SEC 220</td>
<td>Defense-In-Depth</td>
<td>2 2 0</td>
<td></td>
<td>None</td>
<td>This course introduces students to the concepts of defense-in-depth, a security industry best practice. Topics include firewalls, backup systems, redundant systems, disaster recovery, and incident handling. Upon completion, students should be able to plan effective information security defenses, backup systems, and disaster recovery procedures.</td>
</tr>
<tr>
<td>SEC 230</td>
<td>Attack Methodology</td>
<td>3 2 0</td>
<td></td>
<td>SEC 220</td>
<td>This course provides the student with an in-depth look at common network, Internet, and host-based attack methodologies. Topics include attack methods such as social engineering, spoofing, denial of service, man-in-the-middle, session hijacking, password cracking, malicious code and web hacking techniques. Upon completion, students should be able to generate anomalous network traffic, identify common network attack patterns, and perform penetration testing.</td>
</tr>
<tr>
<td>SEC 240</td>
<td>Wireless Security</td>
<td>2 2 0</td>
<td></td>
<td>SEC 110 and NET 175</td>
<td>This course introduces security principles and topics related to the wireless networking environment. Topics include network topologies, network protocols, security issues, and best practices for wireless environments. Upon completion, students should be able to design, setup, manage, and secure a wireless network.</td>
</tr>
<tr>
<td>SEC 260</td>
<td>Secure Administration II</td>
<td>2 2 0</td>
<td></td>
<td>SEC 160</td>
<td>This course provides the skills necessary to design and implement information security controls. Topics include advanced networking and TCP/IP concepts, network vulnerability analysis, and monitoring. Upon completion, students should be able to...</td>
</tr>
</tbody>
</table>
distinguish between normal and anomalous network traffic, identify common network attack patterns, and implement security solutions.

**SEC 270 Secure Routing/Firewalls**  
Prerequisites: NET 226 and SEC 110  
Corequisites: None  
This course introduces the principles of securing networks using routers and firewalls. Topics include networking protocols, threat mitigation, firewall configuration, authentication, authorization, intrusion detection, encryption, IPSec, VPNs, and remote access technologies. Upon completion, students should be able to secure internal networks using router and firewall technologies.

**SEC 275 Advanced Firewalls**  
Prerequisites: SEC 270  
Corequisites: None  
This course covers advanced topics in securing networks using firewalls. Topics include networking protocols, firewall status and configuration, syslog configuration, security levels, NAP/PAT, Access Control Lists, Authentication, Authorization and Accounting, VPN, and Remote Access. Upon completion, students should be able to describe, configure, verify, and manage firewall technologies.

**SEC 289 Security Capstone Project**  
Prerequisites: SEC 220  
Corequisites: None  
This course provides the student the opportunity to put into practice all the skills learned to this point. Emphasis is placed on security policy, process planning, procedure definition, business continuity, and systems security architecture. Upon completion, students should be able to design and implement comprehensive information security architecture from the planning and design phase through implementation.

**SGD 111 Introduction to SGD**  
Prerequisites: None  
Corequisites: None  
This course provides students with an introduction to simulation and game development. Topics include setting, storytelling, narrative, character design, interface design, game play, internal economy, core mechanics, game genres, AI, the psychology of game design and professionalism. Upon completion, students should be able to demonstrate knowledge of the major aspects of simulation and game design and development.

**SGD 112 SGD Design**  
Prerequisites: None  
Corequisites: None  
This course introduces the fundamentals of simulation and game design. Topics include industry standards and design elements for simulations and games. Upon completion, students should be able to design simple simulations and/or games.

**SGD 113 SGD Programming**  
Prerequisites: None  
Corequisites: None  
This course introduces the fundamentals of programming languages and tools employed in simulation and game development. Emphasis is placed on programming concepts used to create simulations and games. Upon completion, students should be able to program simple games and/or simulations.

**SGD 114 3D Modeling**  
Prerequisites: None  
Corequisites: SGD 111  
This course introduces the tools required to create three dimensional (3D) models. Emphasis is placed on exploring tools used to create 3D models. Upon completion, students should be able to create and animate 3D models using 3D modeling tools.

**SGD 122 SG Database Programming**  
Prerequisites: None  
Corequisites: None  
This course covers the creation and application of databases for simulation and game development. Emphasis is placed on various database and software development kits. Upon completion, students should be able to apply their knowledge of databases to the creation of simulations and games.

**SGD 123 Windows Console Programming**  
Prerequisites: SGD 113  
Corequisites: None  
This course introduces the concepts of Windows and Consol Programming. Emphasis is placed on learning MS Windows, the operating systems of various consoles and programming techniques. Upon completion, students should be able to demonstrate an understanding of Windows and of various consoles’ operating systems.

**SGD 124 MMO Programming**  
Prerequisites: SGD 113  
Corequisites: None  
This course introduces the concepts of Massive Multiplayer On-line Programming for simulations and games. Emphasis is on learning Massive Multiplayer On-line simulation and game programming techniques. Upon completion, students should be able to create a Massive Multiplayer On-line simulation or game.

**SGD 125 SG Artificial Intelligence**  
Prerequisites: SGD 113  
Corequisites: None  
This course introduces the artificial intelligence concepts related to simulation and game development. Emphasis is placed on expert systems. Upon completion, students should be able to describe the basic concepts and procedures related to the development of artificial intelligence systems used in simulations and games.

**SGD 126 SG Engine Design**  
Prerequisites: SGD 113  
Corequisites: None  
This course introduces the techniques needed to design and create a simulation/game engine. Emphasis is placed on learning core techniques used to design and create simulation and/or game engines. Upon completion, students should be able to design and create a simulation or game engine.

**SGD 158 SGD Business Mgmt.**  
Prerequisites: ENG 111  
Corequisites: None  
This course introduces the business side of the interactive game industry. Emphasis will be placed on licenses, serious games, psychological profiling, publisher/developer relations, and contract negotiation skills. Upon completion, students should be able to understand how a game evolves from concept to the customer.

**SGD 159 SGD Production Mgmt.**  
Prerequisites: SGD 111  
Corequisites: None  
This course introduces the techniques and methods used in interactive game production and how to manage a project.
Emphasis is placed on scheduling, production plans, marketing and budgeting. Upon completion, students should be able to manage a team, track production, and understand the process of project management.

**SGD 161 SG Animation**
Prerequisites: SGD 114
Corequisites: None
This course introduces the fundamental principles of animation used in simulation and game development. Emphasis is placed on a historical survey of animation, aspects of the animation process and animation techniques. Upon completion, students should be able to produce character sketches, morph simple objects, create walk and run cycles and develop professional storyboards.

**SGD 162 SGD 3D Animation**
Prerequisites: SGD 114
Corequisites: None
This course introduces the fundamental principles of 3D animation used in simulation and game development. Emphasis is placed on a historical survey of 3D animation, aspects of the 3D animation process and 3D animation techniques. Upon completion, students should be able to produce 3D character sketches, morph simple objects, create walk and run cycles and develop professional storyboards.

**SGD 163 SG Documentation**
Prerequisites: ENG 111
Corequisites: None
This course introduces the techniques and methods used to create simulation and game production and design documents. Emphasis is placed on the design document to include scheduling, production plans, marketing and budgeting. Upon completion, students should be able to create design and produce documents for any simulation or game.

**SGD 164 SG Audio/Video**
Prerequisites: None
Corequisites: None
This course introduces various aspects of audio and video and their application in simulations and games. Topics include techniques for producing and editing audio and video for multiple digital mediums. Upon completion, students should be able to produce and edit audio and video for simulations and games.

**SGD 165 SG Character Development**
Prerequisites: SGD 114
Corequisites: None
This course introduces the concepts needed to create a fictional personality for use in digital videos, animations, simulations and games. Topics include aspects of character, developing backgrounds, mannerisms and voice. Upon completion, students should be able to develop characters and backgrounds for simulations and games.

**SGD 166 SG Physiology/Kinesi**
Prerequisites: None
Corequisites: None
This course introduces the principles of physiology and kinesiology as they relate to simulation and game development. Topics include analysis of the human form and other living organisms. Upon completion, students should be able to demonstrate an understanding of the physiology and kinesiology concepts related to simulation and game development.

**SGD 167 SG Ethics**
Prerequisites: ENG 111
Corequisites: None
This course introduces principles of philosophy and ethics as they relate to simulation and game development. Topics include moral philosophy and ethics. Upon completion, students should be able to discuss philosophical and ethical issues related to simulation and game development.

**SGD 168 Wireless SG Programming**
Prerequisites: SGD 213
Corequisites: None
This course introduces the wireless simulation and game programming process. Topics include mobile simulation/game engine construction and performance, sprite animation, control interactions, sound effects, music and wireless networks. Upon completion, students should be able to apply wireless simulation/game programming concepts to the creation multiplayer simulations and games.

**SGD 169 Linux SG Programming**
Prerequisites: SGD 113
Corequisites: None
This course introduces the concepts of Linux programming for use in simulation and game development. Emphasis is placed on Linux programming and tools. Upon completion, students should be able to create a simple game or simulation using Linux.

**SGD 170 Handheld SG Programming**
Prerequisites: SGD 113
Corequisites: None
This course introduces the concepts of hand-held simulation and game development. Emphasis is placed on hand-held game API, including stylus input, system buttons, infrared communications, audio / visual creation and the physics of hand-held game API. Upon completion, students should be able to create a simple simulation or game for a hand-held device.

**SGD 171 Flash SG Programming**
Prerequisites: None
Corequisites: None
This course introduces the Flash programming environment for use in simulation and game development. Topics include timeline effects, extensibility layers, alias text, globalization tools, ActionScript and lingo programming. Upon completion, students should be able to create a simple simulation or game using Flash.

**SGD 172 Visual SG Environments**
Prerequisites: None
Corequisites: None
This course covers the use of virtual reality tools and techniques in simulation and game development. Emphasis is placed on acquiring the skills necessary to create scalable virtual characters and environments for use in simulations and games. Upon completion, students should be able to create a simple game or simulation in a virtual environment.

**SGD 173 Lighting/Shading Algori**
Prerequisites: SGD 214
Corequisites: None
This course introduces the concepts of various lighting and shading algorithms for use in simulation and game development. Topics include various tools used to create light and shadows. Upon completion, students should be able to apply knowledge of various lighting and shading algorithms to the creation of simulations and games.
SGD 174  SG Level Design                      2 0 3 3  
Prerequisites: SGD 114                       
Corequisites: None                           
This course introduces the tools used to create levels for real-time simulations and games. Topics include level design, architecture theory, modeling for 3D engines and texturing methods. Upon completion, students should be able to design simple levels using industry standard tools.

SGD 193  Selected Topics in                 2 2 0 3  
Simulation and Game Development             
Prerequisites: None                         
Corequisites: None                           
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

SGD 212  SGD Design II                     2 3 0 3  
Prerequisites: SGD 112                      
Corequisites: None                           
The course covers the advanced principles of simulation and game design. Topics include advanced design concepts in simulation and game development. Upon completion, students should be able to design an advanced simulation or game.

SGD 213  SGD Programming II                2 3 0 3  
Prerequisites: SGD 113                      
Corequisites: None                           
This course covers advanced programming concepts used to create simulations and games. Emphasis is placed on acquiring advanced programming skills for use in creating simulations and games. Upon completion, students should be able to program an advanced simulation or game.

SGD 214  3D Modeling II                   2 0 3 3  
Prerequisites: SGD 114 and SGD 111          
Corequisites: None                           
This course introduces the tools used to create and animate advanced 3D models. Emphasis is placed on identifying and utilizing the tools required to create and animate advanced 3D models. Upon completion, students should be able to create and animate advanced 3D models using 3D modeling tools.

SGD 274  SGD Level Design II              2 0 3 3  
Prerequisites: SGD 174                      
Corequisites: None                           
This course introduces the advanced tools used to create levels for real-time simulations and games. Topics include advanced level design and architecture theory, concepts related to "critical path" and "flow," game balancing, playtesting and storytelling. Upon completion, students should be able to design complex levels using industry standard tools.

SGD 285  SG Software Engineering          2 0 3 3  
Prerequisites: SGD 212, SGD 213, SGD 214    
Corequisites: None                           
This course introduces object oriented software engineering concepts related to simulation and game development. Topics include systematic approaches to the development, operation and maintenance of simulations and games. Upon completion, students should be able to apply software engineering techniques to the development of simulations and games.

SGD 289  SGD Project                     2 3 0 3  
Prerequisites: SGD 285                      
Corequisites: None                           
This course provides students with the opportunity to create a functional simulation or game with minimal instructor support. Emphasis is placed upon verbal and written communication, skill documentation, professional presentation and user training. Upon completion, students should be able to create and professionally present a fully functional simulation or game.

SGD 293  Selected Topics in               2 2 0 3  
Simulation and Game Development             
Prerequisites: None                         
Corequisites: None                           
This course provides an opportunity to explore areas of current interest in specific program or discipline areas. Emphasis is placed on subject matter appropriate to the program or discipline. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

SGD 210  Introduction to Sociology       3 0 0 3  
Prerequisites: ENG 090, RED 090, or placement 
Corequisites: None                           
This course introduces the scientific study of human society, culture, and social interactions. Topics include socialization, research methods, diversity and inequality, cooperation and conflict, social change, social institutions, and organizations. Upon completion, students should be able to demonstrate knowledge of sociological concepts as they apply to the interplay among individuals, groups, and societies. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences. This course is also available through the Virtual Learning Community (VLC).

SOC 213  Sociology of the Family          3 0 0 3  
Prerequisites: ENG 090, RED 090, or placement 
Corequisites: None                           
This course covers the institution of the family and other intimate relationships. Emphasis is placed on mate selection, gender roles, sexuality, communication, power and conflict, parenthood, diverse lifestyles, divorce and remarriage, and economic issues. Upon completion, students should be able to analyze the family as a social institution and the social forces that influence its development and change. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences. This course is also available through the Virtual Learning Community (VLC).

SOC 220  Social Problems                  3 0 0 3  
Prerequisites: ENG 090, RED 090, or placement 
Corequisites: None                           
This course provides an in-depth study of current social problems. Emphasis is placed on causes, consequences, and possible solutions to problems associated with families, schools, workplaces, communities, and the environment. Upon completion, students should be able to recognize, define, analyze, and propose solutions to these problems. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences. This course is also available through the Virtual Learning Community (VLC).
agreed to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.

<table>
<thead>
<tr>
<th>COURSE DESCRIPTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SOC 225 Social Diversity</strong> 3 0 0 3</td>
</tr>
<tr>
<td>Prerequisites: ENG 090, RED 090, or placement</td>
</tr>
<tr>
<td>Corequisites: None</td>
</tr>
<tr>
<td>This course provides a comparison of diverse roles, interests, opportunities, contributions, and experiences in social life. Topics include race, ethnicity, gender, sexual orientation, class, and religion. Upon completion, students should be able to analyze how cultural and ethnic differences evolve and how they affect personality development, values, and tolerance. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.</td>
</tr>
</tbody>
</table>

| **SOC 230 Race and Ethnic Relations** 0 0 3  |
| Prerequisites: RED 090 and ENG 090  |
| Corequisites: None  |
| This course includes an examination of the various aspects of race and ethnicity and how these lead to different experiences, opportunities, problems, and contributions. Topics include prejudice, discrimination, perceptions, myths, stereotypes, and intergroup relationships. Upon completion, students should be able to identify and analyze relationships among racial and ethnic groups within the larger society. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in social/behavioral sciences.  |

| **SOC 242 Sociology of Deviance** 0 0 3  |
| Prerequisites: ENG 090 and RED 090  |
| Corequisites: None  |
| This course provides an overview of deviant behavior and the processes involved in its definition, causation, prevention, control, and treatment. Topics include theories of causation, social control, delinquency, victimization, criminality, the criminal justice system, punishment, rehabilitation, and restitution. Upon completion, students should be able to identify and analyze issues surrounding the nature and development of social responses to deviance. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement  |

| **SOC 252 Sociology of Work** 0 0 3  |
| Prerequisites: None  |
| Corequisites: None  |
| This course provides an understanding of the work experience in terms of rewards, satisfaction, exploitation, alienation, and institutional function and structure. Topics include an examination of industrial, professional, office, and executive work settings in relation to technology, management, and career opportunities. Upon completion, students should be able to understand work in its changing roles, institutions, and economic impact. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.  |

| **SPA 111 Elementary Spanish I** 0 0 3  |
| Prerequisites: ENG 090 or placement  |
| Corequisites: SPA 181  |
| This course introduces the fundamental elements of the Spanish language within a cultural context. Emphasis is placed on the development of basic listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written Spanish and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement general education core requirement in humanities/fine arts. This course is also available through the Virtual Learning Community (VLC).  |

| **SPA 112 Elementary Spanish II** 0 0 3  |
| Prerequisites: SPA 111  |
| Corequisites: SPA 182  |
| This course is a continuation of SPA 111 focusing on the fundamental elements of the Spanish language within a cultural context. Emphasis is placed on the progressive development of listening, speaking, reading, and writing skills. Upon completion, students should be able to comprehend and respond with increasing proficiency to spoken and written Spanish and demonstrate further cultural awareness.  |

| **SPA 120 Spanish for the Workplace** 0 0 3  |
| Prerequisites: None  |
| Corequisites: None  |
| This course offers applied Spanish for the workplace to facilitate basic communication with people whose native language is Spanish. Emphasis is placed on oral communication and career-specific vocabulary that targets health, business, and/or public service professions. Upon completion, students should be able to communicate at a functional level with native speakers and demonstrate cultural sensitivity. Emphasis will be on cultural awareness and cultural context issues.  |

| **SPA 141 Culture and Civilization** 0 0 3  |
| Prerequisites: None  |
| Corequisites: None  |
| This course provides an opportunity to explore issues related to the Hispanic world. Topics include historical and current events, geography, and customs. Upon completion, students should be able to identify and discuss selected topics and cultural differences related to the Hispanic world.  |

| **SPA 151 Hispanic Literature** 0 0 3  |
| Prerequisites: ENG 111  |
| Corequisites: None  |
| This course includes selected readings by Hispanic writers. Topics include fictional and non-fictional works by representative authors from a variety of genres and literary periods. Upon completion, students should be able to analyze and discuss selected texts within relevant cultural and historical contexts.  |

| **SPA 161 Spanish Lab 1** 0 2 0 1  |
| Prerequisites: ENG 090 or placement  |
| Corequisites: SPA 111  |
| This course provides an opportunity to enhance acquisition of the fundamental elements of the Spanish language. Emphasis is placed on the progressive development of basic listening, speaking, reading, and writing skills through the use of various supplementary learning media and materials. Upon completion, students should be able to comprehend and respond with grammatical accuracy to spoken and written Spanish and demonstrate cultural awareness. This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a premajor and/or elective course requirement.  |
SRV 111 Surveying II
Prerequisites: SRV 110
Corequisites: None
This course introduces route surveying and roadway planning and layout. Topics include simple, compound, reverse, spiral, and vertical curves; geometric design and layout; planning of cross-section and grade line; drainage; earthwork calculations; and mass diagrams. Upon completion, students should be able to calculate and lay out highway curves; prepare roadway plans, profiles, and sections; and perform slope staking.

SRV 112 Landscape Architectural Surveying
Prerequisites: MAT 121
Corequisites: None
This course covers surveying techniques commonly used by landscape architects and contractors. Topics include boundary and topographic surveying. Upon completion students should be able to create boundary and topo maps and layout construction projects both on paper and in the field.

SRV 210 Surveying III
Prerequisites: SRV 110
Corequisites: None
This course introduces boundary surveying, land partitioning, and calculations of areas. Topics include advanced traverses and adjustments, preparation of survey documents, and other related topics. Upon completion, students should be able to research, survey, and map a boundary.

SRV 220 Surveying Law
Prerequisites: SRV 110
Corequisites: None
This course introduces the law as related to the practice of surveying. Topics include surveyors' responsibilities, deed descriptions, title searches, eminent domain, easements, weight of evidence, riparian rights, and other related topics. Upon completion, students should be able to identify and apply the basic legal aspects associated with the practice of land surveying.

SRV 230 Subdivision Planning
Prerequisites: SRV 111, SRV 210, CIV 211
Corequisites: None
This course covers the planning aspects of residential subdivisions from analysis of owner and municipal requirements to plat layout and design. Topics include municipal codes, lot sizing, roads, incidental drainage, esthetic considerations, and other related topics. Upon completion, students should be able to prepare a set of subdivision plans.

SRV 240 Topography/Site Surveying
Prerequisites: CIV 125 and SRV 110
Corequisites: None
This course covers topographic, site, and construction surveying. Topics include topographic mapping, earthwork, site planning, construction staking, and other related topics. Upon completion, students should be able to prepare topographic maps and site plans and locate and stake out construction projects.

SRV 260 Field and Office Practices
Prerequisites: Completion of three semesters of the Surveying Technology program
Corequisites: None
This course covers surveying project management, estimating, and responsibilities of surveying personnel. Topics include record-keeping, starting and operating a surveying business, contracts, regulations, taxes, personnel management, and professional ethics. Upon completion, students should be able to understand...
the requirements of operating a professional land surveying business.

SUR 297 Seminar in Surveying Technology 0 0 2
Prerequisites: Varies, based on topic
Corequisites: None
This course provides an opportunity to explore areas of current interest in Surveying Technology. Emphasis is placed on the development of critical listening skills and the presentation of seminar issues. Upon completion, students should be able to critically analyze issues and establish informed opinions.

SUR 110 Introduction to Surgical Technology 3 0 0 3
Prerequisites: None
Corequisites: SUR 111
This course provides a comprehensive study of the operative environment, professional roles, moral/legal/ethical responsibilities, and medical communications used in surgical technology. Topics include historical development, professional behaviors, medical terminology, interdepartmental/peer/relationships, operating room environment/safety, pharmacology, anesthesia, incisions sites, and physiology of wound healing. Upon completion, students should be able to apply theoretical knowledge of the course topics to the operative environment.

SUR 111 Perioperative Patient Care 5 6 0 7
Prerequisites: None
Corequisites: SUR 110
This course provides theoretical knowledge for the application of essential operative skills during the perioperative phase. Topics include surgical asepsis, sterilization/disinfection, and perioperative patient care. Upon completion, students should be able to demonstrate the principles and practices of aseptic technique, sterile attire, basic case preparation, and other relevant skills.

SUR 122 Surgical Procedures I 5 3 0 6
Prerequisites: SUR 110, SUR 111
Corequisites: SUR 123
This course introduces a comprehensive study of surgical procedures in the following specialties: general, gastrointestinal, obstetrical/gynecology, urology, otorhinolaryngology, and plastics/reconstructive. Emphasis is placed on related surgical anatomy, pathology, and procedures thereby enhancing theoretical knowledge of patient care, instrumentation, supplies, and equipment. Upon completion, students should be able to correlate, integrate, and apply theoretical knowledge of the course topics.

SUR 123 Clinical Practice I 0 0 21 7
Prerequisites: SUR 110, SUR 111
Corequisites: SUR 122
This course provides clinical experience with a variety of perioperative assignments to build skills required for complex perioperative patient care. Emphasis is placed on greater technical skills, critical thinking, speed, efficiency, and autonomy in the operative setting. Upon completion, students should be able to function in the role of an entry-level surgical technologist.

SUR 134 Surgical Procedures II 5 0 0 5
Prerequisites: SUR 123
Corequisites: None
This course introduces orthopedic, neurosurgical, peripheral vascular, thoracic, cardiovascular, and ophthalmology surgical specialties. Emphasis is placed on related surgical anatomy, pathology, and procedures thereby enhancing theoretical knowledge of patient care, instrumentation, supplies, and equipment. Upon completion, students should be able to correlate, integrate, and apply theoretical knowledge of the course topics.

SUR 135 Clinical Practice II 0 0 12 4
Prerequisites: SUR 123
Corequisites: SUR 134, SUR 137
This course provides clinical experience with a variety of perioperative assignments to build skills required for complex perioperative patient care. Emphasis is placed on greater technical skills, critical thinking, speed, efficiency, and autonomy in the operative setting. Upon completion, students should be able to function in the role of an entry-level surgical technologist.

SUR 137 Professional Success Preparation 1 0 0 1
Prerequisites: SUR 123
Corequisites: SUR 134, SUR 135
This course provides job-seeking skills and an overview of theoretical knowledge in preparation for certification. Topics include test-taking strategies, resume preparation, and interviewing techniques. Upon completion, students should be able to prepare a resume, demonstrate appropriate interview techniques, and identify strengths and weaknesses in preparation for certification.

SUR 210 Advanced SUR Clinical Practice 0 0 6 2
Prerequisites: SUR 137
Corequisites: SUR 211
This course is designed to provide individualized experience in advanced practice, education, circulating, and managerial skills. Emphasis is placed on developing and demonstrating proficiency in skills necessary for advanced practice. Upon completion, students should be able to assume leadership roles in a chosen specialty area.

SUR 211 Advanced Theoretical Concepts 2 0 0 2
Prerequisites: SUR 137
Corequisites: SUR 210
This course covers theoretical knowledge required for extension of the surgical technologist role. Emphasis is placed on advanced practice in complex surgical specialties, educational methodologies, and managerial skills. Upon completion, students should be able to assume leadership roles in a chosen specialty area.

SWK 110 Introduction to Social Work 3 0 0 3
Prerequisites: None
Corequisites: None
This course examines the historical development, values, orientation, and professional standards of social work and focuses on the terminology and broader systems of social welfare. Emphasis is placed on the various fields of practice including those agencies whose primary function is financial assistance, corrections, mental health, and protective services. Upon completion, students should be able to demonstrate an understanding of the knowledge, values, and skills of the social work professional.

SWK 113 Working with Diversity 3 0 0 3
Prerequisites: None
Corequisites: None
This course examines and promotes understanding, sensitivity, awareness, and knowledge of human diversity. Emphasis is placed on professional responsibilities, duties, and skills critical to multicultural human services practice. Upon completion, students...
should be able to integrate and expand knowledge, skills, and cultural awareness relevant to diverse populations.

This course is designed to introduce the fundamentals of data/computer networks. Topics include an overview of data communication standards, protocols, equipment, and how they are integrating into network topologies and systems. Upon completion, students should be able to demonstrate an understanding of telecommunication and networking.

This course covers the operating systems and topologies associated with networking. Topics include the various operating systems used in networking and the topologies explained on a network to network level. Upon completion, students should be able to use and explain operating systems and topologies. This course covers LANs, TCP/IP, switches, and routers.

This course provides an opportunity to explore areas of current interest in Telecommunications and Network Engineering Technology. Emphasis is placed on subject matter appropriate to telecommunications and networking. Upon completion, students should be able to demonstrate an understanding of the specific area of study.

This course covers the principles of the design of LAN and WAN networks and upgrading. Topics include securing the network through the use of access lists, routers, firewalls, Ipchains, and stateful packet filtering. Upon completion, students should be able to demonstrate a variety of techniques to harden the network from outside threats. This course covers security protocols and IPSec, VPNs, and firewall routers.

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This course covers the operation of the terminal. Topics include system network overview, subscriber loops, broadband versus baseband systems. Upon completion, students should be able to demonstrate knowledge of the concepts associated with telecommunication network systems. Emphasis will be placed on voice and data communication integration. This course covers the current public switch telephone system, SONET, and SS7.

This course covers the principles of the design of LAN and WAN networks and upgrades. Topics include securing the network through the use of access lists, routers, firewalls, Ipchains, and stateful packet filtering. Upon completion, students should be able to demonstrate a variety of techniques to harden the network from outside threats. This course covers security protocols and IPSec, VPNs, and firewall routers.

This course is designed to introduce Internet concepts. Topics include Internet layer operation, IP routing and addresses and operations. TCP-IP operations and ports, firewalls, gateways, e-mail, and web-site development. Upon completion, students should be able to demonstrate knowledge of the concepts associated with advanced telecommunication network systems. This course covers voice-over-IP and cell phones.

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### COURSE DESCRIPTIONS

#### WEB 110 Internet/ Web Fundamentals
**Prerequisites:** None  
**Corequisites:** None  
This course introduces basic markup language, various navigational tools and services of the Internet. Topics include creating web pages, using internet protocols, search engines, file compression/decompression, FTP, email, list servers, and other related topics. Upon completion, students should be able to deploy a website created with basic markup language, retrieve/compress files, email, FTP, and utilize other internet tools. Topics include HTML and XHTML.

#### WEB 111 Intro to Web Graphics
**Prerequisites:** None  
**Corequisites:** None  
This course is the first of two courses covering the creation of web graphics, addressing problems peculiar to WWW display using appropriate software. Topics include web graphics file types, type conversion, RGB color, the browser-safe palette, elementary special effects, image maps, and other related topics. Upon completion, students should be able to create graphics such as banners, buttons, backgrounds, and other graphics for Web pages. Students will learn transparency, animation, slicing, and layered graphics, and will develop an understanding of the principles of web design.

#### WEB 115 Web Markup and Scripting
**Prerequisites:** WEB 110 or CIS 172 or CIS 115 or CSC 151  
**Corequisites:** None  
This course introduces clientside Internet programming using the current W3C-recommended presentation markup language and supporting elements. Topics include site management and development, markup elements, stylesheets, validation, accessibility, standards, browsers, and basic JavaScripting. Upon completion, students should be able to handle web pages with various media elements according to current markup standards and integrate them into websites. Students will also be exposed to industry standard development tools and practices with these technologies.

#### WEB 120 Introduction to Internet Multimedia
**Prerequisites:** WEB 110 or WEB 140  
**Corequisites:** None  
This is the first of two courses covering the creation of internet multimedia. Topics include internet multimedia file types, file type conversion, acquisition of digital audio/video, streaming audio/video and graphics animation plug-in programs and other related topics. Upon completion, students should be able to create internet multimedia presentations utilizing a variety of methods and applications.

#### WEB 140 Web Development Tools
**Prerequisites:** None  
**Corequisites:** None  
This course provides an introduction to web development software suites. Topics include the creation of web sites and applications using web development software. Upon completion, students should be able to create entire web sites and supporting applications.

#### WEB 180 Active Server Pages
**Prerequisites:** CIS 115 or WEB 115 or CSC 160  
**Corequisites:** None  
This course introduces Active Server Programming. Topics include JavaScript, VBScript, HTML forms processing, and the Active Server Object Model. Upon completion, students should be able to create and maintain Active Server applications. Current trends in ASP, to include ASP.Net will be taught.

#### WEB 182 PHP Programming
**Prerequisites:** WEB 115 or CIS 115 or CSC 160  
**Corequisites:** None  
This course introduces students to the server-side, HTML-embedded scripting language PHP. Emphasis is placed on programming techniques required to create dynamic web pages using PHP scripting language features. Upon completion, students should be able to design, code, test, debug, and create a dynamic web site using the PHP scripting language.

#### WEB 183 Perl Programming
**Prerequisites:** WEB 115 or CIS 115 or CSC 160  
**Corequisites:** None  
This course introduces Perl Programming. Topics include programming techniques using CGI script, input/output operations, sequence, iteration, selection, arithmetic operations, subroutines, modules, integrating database, pattern matching and other related topics. Upon completion, students should be able to design, code, test, and debug Perl language programs.

#### WEB 185 ColdFusion Programming
**Prerequisites:** CIS 115  
**Corequisites:** None  
This course introduces ColdFusion Programming. Topics include installing a ColdFusion development environment, using CFQUERY tags to send and receive database information, creating and displaying a form, and other related topics. Upon completion, students should be able to design, code, test, and debug using a ColdFusion environment.

#### WEB 186 XML Technology
**Prerequisites:** CIS 115; and WEB 110 or CIS 172  
**Corequisites:** None  
This course is designed to introduce students to XML and related internet technologies. Topics include extensible style language (XSL) document object model (DOM), extendible stylesheet language transformation (XSLT), and simple object access protocol (SOAP). Upon completion, students should be able to create a complex XML document.

#### WEB 187 Wireless/Internet Programming
**Prerequisites:** CIS 115  
**Corequisites:** None  
This course introduces the Internet and Web development for portable wireless devices with a focus on practical business-related applications. Topics include WAP, WML, XHTML, XML, and wireless Internet and mobile business practices and techniques. Upon completion, students should be able to develop and wirelessly enable websites and business applications for use on portable electronic devices.

#### WEB 210 Web Design
**Prerequisites:** WEB 111 or ITN 110; and WEB 140 or ITN 140  
**Corequisites:** None  
This course introduces intermediate to advanced web page design techniques. Topics include effective use of graphics, fonts, colors, navigation tools, advanced markup language elements, as well as...
a study of bad design techniques. Upon completion, students should be able to employ advanced design techniques to create high impact and highly functional web pages. Students will develop a working knowledge of using CSS and employing them in a website.

**WEB 211 Advanced Web Graphics**

Prerequisites: WEB 110; and WEB 111 or ITN 110
Corequisites: None

This course is the second of two courses covering web graphics. Topics include graphics acquisition using scanners and digital cameras, graphics optimization, use of masks, advanced special effects, GIF animation, and other related topics. Upon completion, students should be able to create graphics optimized for size, graphic file type, properly converted from digitized sources and create useful animated graphics. Students will learn to manipulate, correct, and enhance digital photographic images.

**WEB 215 Advanced Markup and Scripting**

Prerequisites: WEB 115
Corequisites: None

This course covers advanced programming skills required to design Internet applications. Emphasis is placed on programming techniques required to support network applications. Upon completion, students should be able to design, code, debug, and document network-based programming solutions to various real-world problems using an appropriate programming language.

**WEB 220 Advanced Multimedia**

Prerequisites: WEB 120 or ITN 120
Corequisites: None

This is the second of two courses covering Internet multimedia. Topics include use of advanced Internet multimedia applications. Upon completion, students should be able to create creative Internet multimedia presentations.

**WEB 230 Implementing Web Servers**

Prerequisites: NET 110 or NET 125
Corequisites: None

This course covers website and web server architecture. Topics include installation, configuration, administration, and security of web servers, services, and sites. Upon completion, students should be able to effectively manage the web services deployment lifecycle according to industry standards.

**WEB 250 Database Driven Websites**

Prerequisites: DBA 110 and WEB 140
Corequisites: None

This course introduces dynamic (database-driven) website development. Topics include the use of basic database CRUD statements (create, read, update, and delete) incorporated into web applications, as well as in software architecture principles. Upon completion, students should be able to design and develop database driven web applications according to industry standards.

**WEB 260 E-Commerce Infrastructure**

Prerequisites: WEB 250; and WEB 180 or ITN 120
Corequisites: None

This course introduces the concepts and tools to implement electronic commerce via the Internet. Topics include application and server software selection, securing transactions, use and verification of credit cards, publishing of catalogs, documentation, and site administration. Upon completion, students should be able to setup a working e-commerce Internet web site.

**WEB 285 Emerging Web Technologies**

Prerequisites: None
Corequisites: None

This course will explore, discuss, and research emerging technologies in the web arena. Emphasis is placed on exposure to up-and-coming technologies relating to the web, providing hands-on experience, and discussion of practical implications of these emerging fields. Upon completion, students should be able to articulate issues relating to these technologies.

**WEB 289 Internet Technologies Project**

Prerequisites: WEB 230 and WEB 250
Corequisites: None

This course provides an opportunity to complete a significant Web technologies project from the design phase through implementation with minimal instructor support. Emphasis is placed on project definition, documentation, installation, testing, presentation, and training. Upon completion, students should be able to complete an Internet project from the definition phase through implementation.

**WLD 110 Cutting Processes**

Prerequisites: None
Corequisites: None

This course introduces oxy-fuel and plasma-arc cutting systems. Topics include safety, proper equipment setup, and operation of oxy-fuel and plasma-arc cutting equipment with emphasis on straight line, curve and bevel cutting. Upon completion, students should be able to oxy-fuel and plasma-arc cut metals of varying thickness.

**WLD 111 Oxygen-Fuel Welding**

Prerequisites: None
Corequisites: None

This course introduces the oxygen-fuel welding process. Topics include safety, proper equipment setup, and operation of oxygen-fuel welding equipment with emphasis on bead application, profile, and discontinuities. Upon completion, students should be able to oxy-fuel weld fillets and grooves on plate and pipe in various positions.

**WLD 112 Basic Welding Processes**

Prerequisites: None
Corequisites: None

This course introduces basic welding and cutting. Emphasis is placed on beads applied with gases, mild steel fillers, and electrodes and the capillary action of solder. Upon completion, students should be able to set up welding and oxy-fuel equipment and perform welding, brazing, and soldering processes.

**WLD 115 SMAW (Stick) Plate**

Prerequisites: None
Corequisites: None

This course introduces the shielded metal arc (stick) welding process. Emphasis is placed on padding, fillet, and groove welds in various positions with SMAW electrodes. Upon completion, students should be able to perform SMAW fillet and groove welds on carbon plate with prescribed electrodes.

**WLD 116 SMAW (Stick) Plate/ Pipe**

Prerequisites: WLD 115
Corequisites: None

This course is designed to enhance skills with the shielded metal arc (stick) welding process. Emphasis is placed on advancing manipulative skills with SMAW electrodes on varying joint geometry. Upon completion, students should be able to perform groove welds on carbon steel with prescribed electrodes in the flat, horizontal, vertical, and overhead positions.
WLD 121 GMAW (MIG) FCAW/Plate 2 6 0 4
Prerequisites: None
Corequisites: None
This course introduces metal arc welding and flux core arc welding processes. Topics include equipment setup and fillet and groove welds with emphasis on application of GMAW and FCAW electrodes on carbon steel plate. Upon completion, students should be able to perform fillet and groove welds on carbon steel with prescribed electrodes in the flat, horizontal, and overhead positions.

WLD 122 GMAW (MIG) Plate/Pipe 1 6 0 3
Prerequisites: WLD 121
Corequisites: None
This course is designed to enhance skills with the gas metal arc (MIG) welding process. Emphasis is placed on advancing skills with the GMAW process making groove welds on carbon steel plate and pipe in various positions. Upon completion, students should be able to perform groove welds with prescribed electrodes on various joint geometry.

WLD 131 GTAW (TIG) Plate 2 6 0 4
Prerequisites: None
Corequisites: None
This course introduces the gas tungsten arc (TIG) welding process. Topics include correct selection of tungsten, polarity, gas, and proper filler rod with emphasis placed on safety, equipment setup, and welding techniques. Upon completion, students should be able to perform GTAW fillet and groove welds with various electrodes and filler materials.

WLD 132 GTAW (TIG) Plate/Pipe 1 6 0 3
Prerequisites: WLD 131
Corequisites: None
This course is designed to enhance skills with the gas tungsten arc (TIG) welding process. Topics include setup, joint preparation, and electrode selection with emphasis on manipulative skills in all welding positions on plate and pipe. Upon completion, students should be able to perform GTAW welds with prescribed electrodes and filler materials on various joint geometry. Orbital welding fundamentals will be introduced during this course.

WLD 141 Symbols and Specifications 2 2 0 3
Prerequisites: None
Corequisites: None
This course introduces the basic symbols and specifications used in welding. Emphasis is placed on interpretation of lines, notes, welding symbols, and specifications. Upon completion, students should be able to read and interpret symbols and specifications commonly used in welding.

WLD 261 Certification Practices 1 3 0 2
Prerequisites: WLD 115, WLD 121, WLD 131
Corequisites: None
This course covers certification requirements for industrial welding processes. Topics include techniques and certification requirements for prequalified joint geometry. Upon completion, students should be able to perform welds on carbon steel plate and/or pipe according to applicable codes.

WLD 262 Inspection and Testing 2 2 0 3
Prerequisites: None
Corequisites: None
This course introduces destructive and non-destructive testing methods. Emphasis is placed on safety, types and methods of testing, and the use of testing equipment and materials. Upon completion, students should be able to understand and/or perform a variety of destructive and non-destructive testing processes.
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M.A., Sociology, East Carolina University

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Curriculum Education Services

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B.A., English, Radford University
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<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Credentials</th>
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<tr>
<td>Susane Boukamel</td>
<td>Instructor - English as a Foreign Language</td>
<td>B.A., Social Sciences, SUNY - Stony Brook</td>
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<td></td>
<td>M.A., Linguistics/Spanish, Georgetown University</td>
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<tr>
<td></td>
<td></td>
<td>Master's certification in Reading, University of Chicago-Loyola</td>
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<tr>
<td>Cheryl A. Burk</td>
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<td>B.S.Ed., Elementary Education, University of Missouri-Columbia</td>
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<td>M.Ed., Curriculum Instruction, University of Missouri-Columbia</td>
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<td>Miranda D. Cave</td>
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<td>David D. Cooper</td>
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<td>Sheryl F. Davy</td>
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<td>Timothy E. Dunn</td>
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<td>Rhoderick E. Fleming</td>
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<td>M.S., Mathematics Education, North Carolina State University</td>
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<td>Tonya J. Greene</td>
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<td>M.Ed., Reading Education, University of North Carolina-Chapel Hill</td>
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<td>Vickie L. Grove</td>
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<td>M.A., Spanish, University of Texas, Austin</td>
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<td>M.A., International Management, University of Texas, Dallas</td>
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<td>Iris B. Hill</td>
<td>Instructor - Pre-Curriculum English</td>
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<td>M.A., Reading/English, Appalachian State University</td>
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<td>Robert D. Hoover</td>
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<td>Jeffrey D. Humphrey</td>
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<td>M.Div., Pastoral Ministry, Westminster Theological Seminary</td>
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<td>Michael T. Jones</td>
<td>Instructor - Pre-Curriculum</td>
<td>A.A., Liberal Studies, North Shore Community College</td>
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<td>M.A., Applied Linguistics, University of Massachusetts</td>
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<td>Shelbra B. Jones</td>
<td>Instructor - Pre-Curriculum Mathematics</td>
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<td>B.A., Mathematics, East Carolina University</td>
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<tr>
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<td>Barbara S. Kennedy</td>
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<td>Jennifer R. Leamy</td>
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<td>M.A., English, North Carolina State University</td>
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<tr>
<td>Deborah S. Maness</td>
<td>Instructor - Pre-Curriculum Reading</td>
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<td>M.Ed., Education/Guidance and Personnel Service, North Carolina State University</td>
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ARTS, HUMANITIES AND SOCIAL SCIENCES DIVISION

2008-2009 | Wake Technical Community College
<table>
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<tr>
<th>Name</th>
<th>Title</th>
<th>Education</th>
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<tr>
<td>B.S., Hospitality Management, Appalachian State University</td>
<td>B.A., Spanish, Appalachian State University</td>
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<tr>
<td>M.A., Spanish, University of Georgia</td>
<td>Erin C. Anderson, Instructor - Spanish</td>
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<tr>
<td>Dr. Donald H. Ball, Instructor - English</td>
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<td>B.A., English, East Carolina University</td>
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<td>M.A., English, East Carolina University</td>
<td>Ph.D., American Literature, University of Florida</td>
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<td>Mary B. Bamforth, Instructor - English/ Tech- Prep Liaison</td>
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<td>Dr. Michael M. Chi, Instructor - Psychology</td>
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<td>Elizabeth C. Cochran, Instructor - English</td>
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<td>B.S., Technical Education, North Carolina State University</td>
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</table>
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Certified Medical Radiographer (A.R.R.T.)
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<tr>
<th>Name</th>
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<td>Karen F. Jones</td>
<td>Instructor/Department Head - Bioscience</td>
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<td>B.S., Biology, East Carolina University</td>
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<td>Anne Jones-Sutton</td>
<td>Instructor - Dental Hygiene</td>
<td>B.S., Nursing, University of North Carolina-Chapel Hill</td>
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<td>Dianne L. Keyser</td>
<td>Instructor - Dental Assisting</td>
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<td>Lauree N. King</td>
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<td>Dr. Selena K. Krajewski</td>
<td>Instructor – Health Sciences</td>
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<td>John P. Kumhyr</td>
<td>Instructor - Emergency Medical Science</td>
<td>B.S., Zoology, North Carolina State University</td>
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<td>Kimberly A. Langston</td>
<td>Instructor - Dental Hygiene</td>
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<td>Robin H. Lee</td>
<td>Instructor - Radiography</td>
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<td>William B. Lineback</td>
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<td>Certified EMT-Paramedic, Advanced Cardiac Life Support, Pediatric Advanced</td>
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<td>Life Support, and Basic Trauma Life Support</td>
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<td>Donald B. Little</td>
<td>Instructor/ Interim Department Head -</td>
<td>Human Services Technology</td>
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<td>Brenda P. Maddox</td>
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<td>Ellen M. Martin</td>
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<td>Thomas C. Maynard</td>
<td>Instructor - Emergency Medical Science</td>
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<td>DeLayne R. McGehee</td>
<td>Instructor - Medical Laboratory Technology</td>
<td>B.S., Biology, New Mexico State University</td>
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<td>B.S., Clinical Laboratory Science, University of Texas at El Paso</td>
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<td>Ronda S. Miller</td>
<td>Instructor - Nursing</td>
<td>B.S., Nursing, University of North Carolina-Wilmington</td>
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<td>Jana M. Montgomery</td>
<td>Instructor - Radiography</td>
<td>A.A.S., Radiography, Wake Technical Community College</td>
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<td>B.A., Psychology, Meredith College</td>
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<td>Katherine K. Moore</td>
<td>Instructor – Health Sciences</td>
<td>B.S., Biochemistry, North Carolina State University</td>
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<td>M.S., Clinical Research, Campbell University</td>
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<td>Sidney L. Morris</td>
<td>Instructor - Radiography</td>
<td>A.A.S., Radiologic Technology, Edgecombe Community College</td>
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<td>Dale A. O’Neal</td>
<td>Instructor - Nursing</td>
<td>B.S.N., Nursing, East Carolina University</td>
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<td>M.S., Adult Education, North Carolina State University</td>
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<tr>
<td>Charmaine A. Parker</td>
<td>Instructor/Department Head - Medical</td>
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<td>Certified Allied Health Instructor, Registry of American Medical Technologists</td>
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<td>Grady S. Patterson, III</td>
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<td>A.A.S. Emergency Medical Science, Wake Technical Community College</td>
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<td>Instructor - Emergency Medical Science</td>
<td>A.A.S., Emergency Medical Science, Wake Technical Community College</td>
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<td>Jeanne R. Phelps</td>
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<td>M.Ed., Health Occupations, North Carolina State University</td>
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<td>Paula H. Perry</td>
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<td>Certificate, Medical Technology, New Hanover Memorial Hospital</td>
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<td>MT (ASCP) Medical Technologist, American Society for Clinical Pathology</td>
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Thomas R. Cole, *Biology Lab Technician*
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<table>
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<th>Name</th>
<th>Title</th>
<th>CREDENTIALS</th>
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<tbody>
<tr>
<td>Jacqueline M. Copeland</td>
<td>Instructor - Mathematics</td>
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<tr>
<td>Dr. Susan J. Kent</td>
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<tr>
<td>M.S., Mathematics</td>
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<td>Marquette University</td>
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<td>Janet C. Creech</td>
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<td>Elizabeth P. Davidson</td>
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<td>M.S., Biology and Biology Education, Old Dominion University</td>
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<td>Old Dominion University</td>
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<td>Mimi R. Davis</td>
<td>Instructor - Biology</td>
<td>B.A., M.A., Psychology, Southern Methodist University</td>
<td>University of Alabama</td>
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<td>M.S., Biology and Biology Education, Texas Woman's University</td>
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<td>Dr. Ajit S. Dixit</td>
<td>Instructor - Chemistry</td>
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<td>Dr. Lori A. Frear</td>
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<td>Dr. Kenneth L. Howard</td>
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<td>Scott T. Johnson</td>
<td>Instructor - Biology</td>
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<td>Monmouth College</td>
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<td>Catherine A. Jordan</td>
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<td>University of Arkansas</td>
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<td>Dr. Robert C. Pellow</td>
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<td>University of Florida</td>
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<tr>
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<tr>
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</tr>
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<tr>
<td>Annie A. Hodge</td>
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</tr>
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\item **Edith M. Arrington, Associate Dean of Students**  
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Audra H. Luckham ....................................................... Secretary, Student Services
Barbara E. Lyczkowski ................................................ Secretary, Curriculum Education Services
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<thead>
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<th>Title and Department</th>
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<tbody>
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<tr>
<td>Rasheeda E. McAllister</td>
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<td>Dianne Medlin</td>
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<td>Paul B. Miles</td>
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<tr>
<td>Patricia M. Miller</td>
<td>Accounting Assistant, Administrative Affairs</td>
</tr>
<tr>
<td>Ronda D. Minor</td>
<td>Lead Secretary, Curriculum Education Services</td>
</tr>
<tr>
<td>Melissa R. Moyer</td>
<td>Secretary, Student Services</td>
</tr>
<tr>
<td>Amy R. Murray</td>
<td>Blackboard Administrator, Administrative Affairs</td>
</tr>
<tr>
<td>Timothy O. Nicholson</td>
<td>Project Manager, Facility Operations Services</td>
</tr>
<tr>
<td>Cary W. Osborne</td>
<td>IT Analyst, Administrative Affairs</td>
</tr>
<tr>
<td>Nicole W. Penny</td>
<td>Database Administrator, Administrative Affairs</td>
</tr>
<tr>
<td>William D. Phillips</td>
<td>IT Technician, Administrative Affairs</td>
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<tr>
<td>Rhonda G. Pickett</td>
<td>Office Assistant, Student Services</td>
</tr>
<tr>
<td>Douglas A. Plautz</td>
<td>Safety Officer, Facility Operations Services</td>
</tr>
<tr>
<td>Rita J. Plum</td>
<td>Human Resources Assistant, Office of the President</td>
</tr>
<tr>
<td>Carolyn P. Porter</td>
<td>Records Assistant I, Student Services</td>
</tr>
<tr>
<td>Jimmy L. Price</td>
<td>Supervisor/Bldg Maintenance, Facility Operations Services</td>
</tr>
<tr>
<td>Jane E. Proctor</td>
<td>Office Assistant, Curriculum Education Services</td>
</tr>
<tr>
<td>James S. Purnell, II</td>
<td>Technical Assistant to the Director, Continuing Education Services</td>
</tr>
<tr>
<td>Lorraine H. Purta</td>
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<td>Pamela A. Rakes</td>
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<td>Billie L. Rand</td>
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<tr>
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<tr>
<td>Joseph F. Rich II</td>
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<tr>
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<td>Lorianne P. Robinson</td>
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<tr>
<td>Chris A. Roj</td>
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<tr>
<td>Brenna E. Roess</td>
<td>Financial Aid Assistant, Student Services</td>
</tr>
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<td>Frances W. Sanderson</td>
<td>Director of Design and Publications, Administrative Affairs</td>
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<tr>
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<tr>
<td>Nancy L. Seagroves</td>
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<tr>
<td>Deborah L. Searcy</td>
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<tr>
<td>Tina H. Sikes</td>
<td>Web Programmer, Administrative Affairs</td>
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<tr>
<td>Cynthia J. Simmons</td>
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<tr>
<td>Mohani K. Singh</td>
<td>Secretary, Curriculum Education Services</td>
</tr>
<tr>
<td>Terri A. Singleton</td>
<td>Patient Care Coordinator, Curriculum Education Services</td>
</tr>
<tr>
<td>Beverly N. Smith</td>
<td>VA Records Assistant, Student Services</td>
</tr>
<tr>
<td>Charles K. Snelling</td>
<td>General Facilities Worker, Facility Operations Services</td>
</tr>
<tr>
<td>Princess M. Solomon</td>
<td>Technical Assistant, Student Services</td>
</tr>
<tr>
<td>M. Tess Spencer</td>
<td>Office Assistant, Curriculum Education Services</td>
</tr>
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R. Stan Wood .................................................................................................... Manager/Satellite Campuses, Administrative Affairs
Denis G. Winters ........................................................................................ Assistant Security Manager, Facility Operations Services
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Fred Zahn .................................................................................................................. Manager/Network Team, Administrative Affairs
# CONTACT INFORMATION

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<th>WEB ADDRESS</th>
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<td>Main Campus: 9101 Fayetteville Road (401 S), Raleigh, NC 27603</td>
<td><a href="http://maincampus.waketech.edu/">http://maincampus.waketech.edu/</a></td>
<td>919-866-5000</td>
</tr>
<tr>
<td>Health Sciences Campus: 2901 Holston Lane, Raleigh, NC 27610</td>
<td><a href="http://healthsciencscampus.waketech.edu/">http://healthsciencscampus.waketech.edu/</a></td>
<td>919-747-0400</td>
</tr>
<tr>
<td>Western Wake Campus: 3434 Kildaire Farm Road, Cary, NC 27518</td>
<td><a href="http://westerncampus.waketech.edu/">http://westerncampus.waketech.edu/</a></td>
<td>919-335-1000</td>
</tr>
<tr>
<td>Business &amp; Industry Center: 3434 Kildaire Farm Road, Cary, NC 27518</td>
<td><a href="http://bic.waketech.edu">http://bic.waketech.edu</a></td>
<td>919-335-1001</td>
</tr>
<tr>
<td>Northern Wake Campus: 6600 Louisburg Road Raleigh, NC 27616</td>
<td><a href="http://northerncampus.waketech.edu/">http://northerncampus.waketech.edu/</a></td>
<td>919-532-5501 or 5502</td>
</tr>
<tr>
<td>Adult Education Center: 1920 Capital Boulevard, Raleigh, NC 27604</td>
<td><a href="http://facilities.waketech.edu/campuses/aec.php">http://facilities.waketech.edu/campuses/aec.php</a></td>
<td>919-715-3434</td>
</tr>
<tr>
<td>State Personnel Development Center (SPDC): 101 West Peace Street, Raleigh, NC 27603</td>
<td><a href="http://www.osp.state.nc.us/train.htm">http://www.osp.state.nc.us/train.htm</a></td>
<td>919-733-2474</td>
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<tr>
<td>GENERAL INFORMATION</td>
<td><a href="http://www.waketech.edu/">http://www.waketech.edu/</a></td>
<td>919-866-5000</td>
</tr>
<tr>
<td>CALENDARS/DEADLINES</td>
<td><a href="http://calendars.waketech.edu/">http://calendars.waketech.edu/</a></td>
<td>919-866-5500</td>
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<tr>
<td>ADMISSIONS</td>
<td><a href="http://admissions.waketech.edu/">http://admissions.waketech.edu/</a></td>
<td>919-866-5000</td>
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<tr>
<td>ADVISING</td>
<td><a href="http://advising.waketech.edu/">http://advising.waketech.edu/</a></td>
<td>919-866-5000</td>
</tr>
<tr>
<td>BASIC SKILLS (GED, Adult High School, etc.)</td>
<td><a href="http://basicskills.waketech.edu/">http://basicskills.waketech.edu/</a></td>
<td>919-866-5280 or 715-3434</td>
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<tr>
<td>CONTINUING EDUCATION</td>
<td><a href="http://conted.waketech.edu/">http://conted.waketech.edu/</a></td>
<td>919-866-5800</td>
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<tr>
<td>CURRICULUM EDUCATION</td>
<td><a href="http://curred.waketech.edu/">http://curred.waketech.edu/</a></td>
<td>919-866-5000</td>
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<tr>
<td>DISTANCE EDUCATION</td>
<td><a href="http://DistanceEd.waketech.edu/">http://DistanceEd.waketech.edu/</a></td>
<td>919-866-5618</td>
</tr>
<tr>
<td>DUAL ENROLLMENT (High School &amp; College concurrent enrollment)</td>
<td><a href="http://admissions.waketech.edu/dualenroll.php">http://admissions.waketech.edu/dualenroll.php</a></td>
<td>919-866-5425</td>
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<tr>
<td>ITS Services and Support (Helpdesk/ EagleCruiser/WebAdvisor, etc.)</td>
<td><a href="http://its.waketech.edu/service.php">http://its.waketech.edu/service.php</a></td>
<td>919-866-7000</td>
</tr>
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Information subject to change - RF 5/28/08
# Wake Technical Community College
## Resources and Services

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>MAIN (401 S) CAMPUS LOCATION</th>
<th>PHONE</th>
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<tbody>
<tr>
<td>Advising: College/University Transfer</td>
<td>Student Services, Rooms 253 <a href="http://advising.waketech.edu/">http://advising.waketech.edu/</a></td>
<td>866-5474</td>
</tr>
<tr>
<td>Advising: Computer and Engineering, Business, and Applied Technologies</td>
<td>Student Services, Room 128 <a href="http://advising.waketech.edu/">http://advising.waketech.edu/</a></td>
<td>866-5000</td>
</tr>
<tr>
<td>Cashier’s Office</td>
<td>Holding Hall, Room 111</td>
<td>866-5900</td>
</tr>
<tr>
<td>College Bookstore</td>
<td>Beside Student Services Bldg. <a href="http://bookstore.waketech.edu">http://bookstore.waketech.edu</a></td>
<td>771-1663 or 866-5959</td>
</tr>
<tr>
<td>Computer Labs</td>
<td>PLM 151 (Main) Math/Science Bldg. Room 216 (Northern) Room 254 (Western) Rooms 314A &amp; 514A (Health Sciences) <a href="http://students.waketech.edu/computerlabs.php">http://students.waketech.edu/computerlabs.php</a></td>
<td>866-5644 (Library: Main) 747-0000 (Library: Health) *Additional computer resources are available at each library and ILC location)</td>
</tr>
<tr>
<td>Cooperative Education</td>
<td>Holding Hall, Room 108C <a href="http://coopeducation.waketech.edu/">http://coopeducation.waketech.edu/</a></td>
<td>866-5694</td>
</tr>
<tr>
<td>Counseling: Academic, Career, and Personal</td>
<td>Student Services, Room 143 <a href="http://counseling.waketech.edu/">http://counseling.waketech.edu/</a></td>
<td>866-5460</td>
</tr>
<tr>
<td>Disability Support Services</td>
<td>Holding Hall, Room 108 <a href="http://disabilityservices.waketech.edu/">http://disabilityservices.waketech.edu/</a></td>
<td>866-5670</td>
</tr>
<tr>
<td>Enrollment &amp; Records Services</td>
<td>Holding Hall, Room 124 <a href="http://registration.curred.waketech.edu/">http://registration.curred.waketech.edu/</a></td>
<td>866-5700</td>
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<tr>
<td>Financial Aid</td>
<td>Student Services, Room 015 <a href="http://financialaid.waketech.edu/">http://financialaid.waketech.edu/</a></td>
<td>866-5417</td>
</tr>
<tr>
<td>Individualized Learning Center (ILC) (Reading, Writing, &amp; Math tutoring)</td>
<td>ILC Building (Main) Room 213 (Northern) Room 253 (Western) Annex Bldg. Suite 203 (Health Sciences) <a href="http://ilc.waketech.edu/">http://ilc.waketech.edu/</a></td>
<td>866-5276 (Main) 532-5549 (Northern) 335-1028 (Western) 250-4241 (Health Sciences)</td>
</tr>
<tr>
<td>Job Placement</td>
<td>Holding Hall, Room 108C <a href="http://jobplacement.waketech.edu/">http://jobplacement.waketech.edu/</a></td>
<td>866-5695</td>
</tr>
<tr>
<td>Library</td>
<td>Library Education, First Floor <a href="http://library.waketech.edu/">http://library.waketech.edu/</a></td>
<td>866-5644</td>
</tr>
<tr>
<td>Photo I.D.</td>
<td>Student Services, Room 121F <a href="http://studentactivities.waketech.edu/idbadges.php">http://studentactivities.waketech.edu/idbadges.php</a></td>
<td>866-5405</td>
</tr>
<tr>
<td>Security (Emergency)</td>
<td>Holding Hall, Room 101A <a href="http://facilities.waketech.edu/security/">http://facilities.waketech.edu/security/</a></td>
<td>866-5911</td>
</tr>
<tr>
<td>SGA (Student Activities)</td>
<td>Student Services, Room 121G <a href="http://studentactivities.waketech.edu/sga.php">http://studentactivities.waketech.edu/sga.php</a></td>
<td>866-5942</td>
</tr>
<tr>
<td>Veteran’s Information</td>
<td>Student Services, Room 015 <a href="http://veterans.waketech.edu">http://veterans.waketech.edu</a></td>
<td>866-5401</td>
</tr>
</tbody>
</table>

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Wake Tech Main Campus
9101 Fayetteville Road, Raleigh, NC
919-866-5000 or 919-662-3400
http://maincampus.waketech.edu

PARKING MAP

MAIN CAMPUS

1. Parking and traffic rules and regulations are enforced 24 hours per day.
2. Always follow one-way traffic arrows.
3. Head-in and parallel parking only.
4. Parking permitted only in designated spaces.
5. Campus speed limit is 20 mph maximum.
6. See back for Traffic Rules and Regulations

AT Automotive and Heavy Duty Equipment Building
BK Bookstore
CC Child Care Facility
ILC Engineering Technology Annex
ETB Engineering Technology Building
HO Holding Hall
LE Howell Library Education
MT Mechanical Technology
PM Power Mechanics
PLM Pucher-LeMay Hall
RE Ready Hall
SS Student Services
tE Technical Education

to Raleigh
Old McCullers Road SR2779

HILWAY 401 Fayetteville Road

to Fuquay-Varina
Tech Road SR2811
Western Wake Campus
3434 Kildaire Farm Road (Millpond Village), Cary, NC
919-335-1000
http://westerncampus.waketech.edu
Health Sciences Campus
2901 Holston Lane, Raleigh, NC
919-747-0400
http://healthsciencescampus.waketech.edu
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